



## Calhoun: The NPS Institutional Archive DSpace Repository

---

Theses and Dissertations

1. Thesis and Dissertation Collection, all items

---

1982-03

### Intergenerational occupational inheritance in the Department of Defense.

Hunt, Joseph McVicker.

---

<http://hdl.handle.net/10945/20222>

---

*Downloaded from NPS Archive: Calhoun*



<http://www.nps.edu/library>

Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community.

Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

Dudley Knox Library / Naval Postgraduate School  
411 Dyer Road / 1 University Circle  
Monterey, California USA 93943



DULLEY KNOX LIBRARY  
NAVAL POSTGRADUATE SCHOOL  
MONTEREY, CALIF. 93940









# NAVAL POSTGRADUATE SCHOOL

## Monterey, California



# THESIS

INTERGENERATIONAL OCCUPATIONAL INHERITANCE  
IN THE  
DEPARTMENT OF DEFENSE

by

Joseph M. Hunt, Jr.

March, 1982

Thesis Co-Advisors:

George W. Thomas  
Ronald A. Weitzman

Approved for public release; distribution unlimited

T204039



## UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Intergenerational Occupational Inheritance in the Department of Defense		5. TYPE OF REPORT & PERIOD COVERED Master's Thesis March, 1982
7. AUTHOR(s)  Joseph M. Hunt, Jr.		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS  Naval Postgraduate School Monterey, California 93940		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS  Naval Postgraduate School Monterey, California 93940		12. REPORT DATE
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		13. NUMBER OF PAGES 133
		15. SECURITY CLASS. (of this report)  Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)  Approved for public release; distribution unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)  Intergenerational Occupational Inheritance Immobility Ratios Other Junior Participation Rates Nonjunior Career Junior		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  This thesis examined military service as an intergenerational occupation by determining the proportions of non-juniors, other juniors and career juniors in the Department of Defense in 1979. Immobility ratios were calculated for DoD and various subgroups based on rank, sex, race, and years of service to determine whether juniors are represented in the military in similar proportions to their composition in		



UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (Initial Date Entered)

the population at large. Multiple Classification Analysis was used to test and analyze behavioral and socioeconomic differences among junior groups. Discriminant analysis was used to statistically distinguish among the three junior status categories and measure the success of correctly classifying officer and enlisted respondents in their appropriate junior group. Conclusions reached were: DoD exhibits strong intergenerational occupational inheritance tendencies when compared to most salary or wage earning civilian occupations; the three junior groups differ significantly in behavior and socioeconomic characteristics; junior status explains very little variation for the dependent variables examined after controlling for the effects of branch of service, sex, race and length of service.



Approved for public release; distribution unlimited

Intergenerational Occupational Inheritance  
in the  
Department of Defense

by

Joseph M. Hunt, Jr.  
Captain, United States Army  
B.S., Fairleigh Dickinson University, 1969

Submitted in partial fulfillment of the  
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL  
March, 1982



ABSTRACT

This thesis examined military service as an intergenerational occupation by determining the proportions of non-juniors, other juniors and career juniors in the Department of Defense in 1979. Immobility ratios were calculated for DoD and various subgroups based on rank, sex, race, and years of service to determine whether juniors are represented in the military in similar proportions to their composition in the population at large. Multiple Classification Analysis was used to test and analyze behavioral and socioeconomic differences among junior groups. Discriminant analysis was used to statistically distinguish among the three junior status categories and measure the success of correctly classifying officer and enlisted respondents in their appropriate junior group. Conclusions reached were: DoD exhibits strong intergenerational occupational inheritance tendencies when compared to most salary or wage earning civilian occupations; the three junior groups differ significantly in behavior and socioeconomic characteristics; junior status explains very little variation for the dependent variables examined after controlling for the effects of branch of service, sex, race and length of service.



## TABLE OF CONTENTS

I.	INTRODUCTION AND LITERATURE REVIEW -----	12
A.	PURPOSE OF THE RESEARCH -----	12
B.	OCCUPATIONAL CHOICE -----	13
C.	INTERGENERATIONAL OCCUPATIONAL INHERITANCE -----	15
D.	THE MILITARY AS AN INTERGENERATIONAL OCCUPATION --	21
II.	METHODOLOGY -----	24
A.	DATA BASE -----	25
1.	Sample Procedure and Size -----	25
2.	Sample Weighting -----	26
3.	Recode of Parental Military Experience Variables -----	27
B.	PARTICIPATION RATES -----	27
C.	IMMOBILITY RATIOS -----	29
D.	SOCIOECONOMIC AND BEHAVIORAL DIFFERENCES -----	30
1.	General Socioeconomic Information -----	31
2.	Satisfaction with and Perceptions of Military -----	32
3.	Career and Reenlistment Intentions -----	32
III.	RESULTS OF DEMOGRAPHIC DATA ANALYSIS -----	33
A.	PREVALENCE OF JUNIORS -----	33
1.	DoD Aggregate Officer and Enlisted Population -----	33
2.	DoD Enlisted Population -----	35
3.	DoD Officer Population -----	35
4.	Junior Status Analysis by Sex -----	38



5. Junior Status Analysis by Race -----	40
6. Junior Status Analysis by Years of Service --	45
7. Summary -----	51
B. DOD PARTICIPATION RATES AND IMMOBILITY RATIOS ---	52
IV. MULTIVARIATE ANALYSIS -----	61
A. MULTIPLE CLASSIFICATION ANALYSIS -----	61
1. Enlisted Multiple Classification Analysis Results -----	62
2. Officer Multiple Classification Analysis Results -----	77
B. DISCRIMINANT ANALYSIS -----	91
1. Enlisted Discriminant Analysis Results -----	91
2. Officer Discriminant Analysis Results -----	103
3. Summary of Discriminant Analysis -----	117
V. CONCLUSIONS AND RECOMMENDATIONS -----	120
A. INTERGENERATIONAL TENDENCIES WITHIN DEPARTMENT OF DEFENSE -----	120
B. BEHAVIORAL AND SOCIOECONOMIC DIFFERENCES -----	121
C. POLICY IMPLICATIONS -----	122
D. RECOMMENDATIONS FOR FURTHER RESEARCH -----	123
APPENDIX A Recode of Parental Military Experience Variables -----	125
LIST OF REFERENCES -----	131
INITIAL DISTRIBUTION LIST -----	133



LIST OF TABLES

1.1	Mobility from Father's Occupation to Own Occupation: Men in the Experienced Civilian Labor Force Aged 21-64 in March 1962, Percentages -----	16
1.2	Mobility from Father's Occupation to Own Occupation: Men in the Experienced Civilian Labor Force Aged 21-64 In March 1973 (N=10,553) -----	17
1.3	Occupation of Males, by Father's Occupation, 1957 --	19
1.4	Mobility from Father's Occupation to Occupation in 1962, for Males 25-64 Years Old: Ratios of Observed Frequencies to Frequencies Expected on the Assumption of Independence -----	20
2.1	Relationship of Returned Questionnaires to DoD Population -----	28
3.1	Prevalence of Juniors within DoD -----	34
3.2	Prevalence of Enlisted Juniors within DoD -----	36
3.3	Prevalence of Officer Juniors within DoD -----	37
3.4	Enlisted Junior Status by Branch of Service by Sex -	39
3.5	Officer Junior Status by Branch of Service by Sex --	41
3.6	Enlisted Junior Status by Branch of Service by Race	42
3.7	Officer Junior Status by Branch of Service by Race -	44
3.8	Years of Service (YOS) Stratification -----	45
3.9	Enlisted Junior Status by Branch of Service by Years of Service -----	46
3.10	Officer Junior Status by Branch of Service by Years of Service -----	49
3.11	DoD Participation Rates and Immobility Ratios -----	54
3.12	Immobility Ratios in 12-by-12 Occupational Mobility Classifications -----	59
4.1	Age when Entered Service for Enlisted Personnel ----	63
4.2	Father's Education for Enlisted Personnel -----	65



4.3	Enlisted Respondent's Education -----	67
4.4	Satisfaction with Military Life for Enlisted Personnel -----	68
4.5	Enlisted Morale at Current Location -----	70
4.6	Total Years of Service Intended for Enlisted Personnel -----	72
4.7	Final Paygrade Expected for Enlisted Personnel ----	74
4.8	Likeliness to Reenlist-No Bonus for Enlisted Personnel -----	75
4.9	Age when Entered Service for Officers -----	78
4.10	Father's Education for Officers -----	80
4.11	Officer Respondent's Education -----	82
4.12	Satisfaction with Military Life for Officers -----	83
4.13	Officer Morale at Current Location -----	85
4.14	Total Years of Service Intended for Officers -----	86
4.15	Final Pay Grade Expected for Officers -----	88
4.16	Junior Status by Officer Procurement Programs -----	89
4.17	Enlisted Sample and Group Means -----	93
4.18	Wilks Stepwise Selection Criterion for Enlisted Sample -----	95
4.19	Enlisted Summary Table -----	96
4.20	Canonical Discriminant Functions for Enlisted Sample -----	97
4.21	Standardized Canonical Discriminant Function Coefficients for Enlisted Sample -----	101
4.22	Enlisted Classification Function Coefficients -----	102
4.23	Enlisted Classification Results -----	104
4.24	Officer Sample and Group Means -----	106
4.25	Wilks Stepwise Selection Criterion for Officers ---	107



4.26	Officer Summary Table -----	109
4.27	Officer Canonical Discriminant Functions -----	110
4.28	Officer Standardized Canonical Discriminant Function Coefficients -----	114
4.29	Officer Classification Function Coefficients -----	116
4.30	Officer Classification Results -----	118



## LIST OF FIGURES

1	Estimates of Male Career Juniors as a Percent of the National Population in Assumed Modal Age Span for Service Entry as Officers, 1950-1998, and as Enlisted Persons, 1946-1994 -----	53
2	Enlisted Occupational Inheritance -----	56
3	Officer Occupational Inheritance -----	57
4	Enlisted Junior Status Group Centroid Plot -----	99
5	Officer All-Groups Scatterplot -----	112
6	Officer Territorial Map -----	113
A.1	Enlisted Junior Status Program -----	126
A.2	Officer Junior Status Program -----	129



#### ACKNOWLEDGEMENT

I would like to extend my sincere appreciation to my thesis advisors Professor George W. Thomas and Professor Ronald A. Weitzman for their assistance, guidance and patience. My thanks to Captain (P) Pat Hayden, Mrs. Kathy Kocher and Mr. Dennis Mar for their untiring patience and support in teaching me SPSS. Most of all, I would like to thank Darleen, my wife and typist, and our three daughters for their constant support, encouragement, love and understanding.



## I. INTRODUCTION AND LITERATURE REVIEW

Today, even with all the technical sophistication and educational advancements, an individual's life cycle is interspersed with and dependent upon continually perplexing decisions, most important of which may be occupational selection. The influence of parents, spouses, friends, and the "significant others" contributes substantially to most decisions, in particular, decisions involving occupational pursuits. For many, the decision of occupational choice has been merely one of acceptance, acceptance of the fact that you were destined to follow in your father's footsteps and carry on the family tradition.

Military occupational inheritance has been a neglected topic by the Department of Defense (DoD). With the continuing decline in eligible and qualified manpower resources, the institution of the all-volunteer force, rising labor and manpower costs, and intense competition with the private sector for today's youth, it is important to understand and explore the effects of intergenerational succession in the military.

### A. PURPOSE OF THE RESEARCH

The purpose of this thesis is to analyze DoD as an intergenerational occupation. The prevalence of military juniors, military personnel whose parents experienced military service, will be addressed at the aggregate DoD level within both the



officer corps and enlisted ranks. After determining the degree of intergenerational occupational inheritance within DoD, the research will examine possible differences between specific junior groupings. Specifically, this thesis will attempt to determine if nonjuniors, career juniors (military personnel whose parents had ten or more years of military experience), and other juniors differ in socioeconomic characteristics from one another; whether each junior group has different career intentions; and which of the junior groups are most likely to enter the military. This research will utilize work completed by Lieutenant Commander Robinson in June, 1981, in which she analyzed the Navy as an intergenerational occupation [Ref. 1].

#### B. OCCUPATIONAL CHOICE

The decision to select and pursue a specific occupation can be influenced by a number of factors. Simpson and Simpson [Ref. 2: p. 15] identify three factors of significance that influence individuals when it comes to occupational choice. First, the general level of upward mobility in society and the fact that a great deal of inheritance of occupational level exists. Second, when actually making the choice, many people are influenced by parents, friends and the "significant others." The third factor is the individual's perception of certain occupations and the fulfillment to be achieved by each occupation.



For those who perceive alternatives, the choice of an occupation is based on comparative evaluations of career possibilities. Available information is a vital resource to the decisionmaker. Limited knowledge and opportunity tend to reduce the number of occupations one might otherwise consider. Shartle [Ref. 3: p. 62] and Taylor [Ref. 4: p. 62] point out that people base occupational decisions on very sketchy and often limited information. This is due, in part, to the increasing number of occupations in an urbanized society.

Caplow [Ref. 5: pp. 78-79] addresses the association between parents' status and the occupational choices of their children. He concludes that the educational system is the principal mechanism for the inheritance of occupational levels even though parents' social status enables some to place their children in advantageous positions. In the Western world formal education has become the principal channel of upward mobility. The level of parents' education influences the occupational choices of their children [Ref. 5: p. 79]. Movement between social classes is in part a function of the distribution of educational opportunities. In the past, various educational programs have been implemented to enable entire social groups, heretofore excluded, to acquire a higher level of education. An example of such a program is the previous educational benefits associated with the G.I. Bill of Rights.



### C. INTERGENERATIONAL OCCUPATIONAL INHERITANCE

The inheritance of an occupation from one generation to the next is referred to as intergenerational occupational succession. Intergenerational occupational inheritance is a well-established general social phenomenon. This phenomenon incorporates two dimensions, the vertical dimension of occupational status and the institutional dimension which addresses the higher-than-random probability that children will follow occupational pursuits similar to those of their parents. These pursuits include occupations and careers in both the public and private sectors.

The Bureau of the Census conducted Occupational Changes in a Generation (OCG) surveys in 1962 and 1973. Researchers interested in the intergenerational occupational mobility of civilians [<sup>Ref. 2, 4, 6, 7, 8</sup>] have used the OCG data to determine the upward movement of sons to a higher occupational stratum than their fathers. The OCG surveys were comprised of seventeen occupational categories. Generally, analysis of this and other survey data concludes that sons exhibit a greater propensity to enter their father's occupation than move into other occupational classes. The trend in occupational mobility is toward greater movement. As indicated in Tables 1.1 and 1.2 [<sup>Ref. 9: pp. 536-537</sup>], there has been little change from 1962 to 1973 in the rates of occupational mobility from father's occupation to son's current occupation. Rates of mobility in 1973, however, are consistently higher than those in 1962 from first occupation to current occupation.



TABLE I.1

### Mobility from Father's Occupation to Own Occupation: Men in the Experienced Civilian Labor Force Aged 21-64 in March 1962, Percentages



TABLE 1.2

## Mobility from Father's Occupation to Own Occupation: Men in the Experienced Civilian Labor Force Aged 21-64 in March 1973 (N = 10,553)



Mobility ratios depicted in Tables 1.3 [Ref. 4] and 1.4 [Ref. 6: p. 32] are the ratio of the observed number of people in an occupational cell to the expected number in that cell had individuals from all fathers' occupational classes experienced equally likely opportunities of choosing that occupation. For example, in Table 1.4 the ratio for other craftsmen is 1.7; this means 1.7 times as many respondents in the other craftsmen category had fathers in the same occupation than if the son's choice of occupation had been independent of his fathers.

Occupational inheritance varies among different civilian occupational classes. The extent to which it occurs depends on the amounts of self-employment, the individual's proprietarial interest in the occupation, and physical instruments used in the occupation [Ref. 6: p. 41]. Farmers, independent professionals, and proprietors are examples of occupations which exhibit these characteristics. Caplow [Ref. 5: p. 77] indicates that farming is the most frequently inherited occupation. The inheritance of property, the usefulness of childhood training, and the immersion of the occupation in a well-defined local culture are contributing factors that facilitate the gradual assumption of the parental role. As an occupation, the military exhibits the characteristics of isolation and . a well-defined culture.

When examining changes in occupational inheritance and mobility, it is important to determine which changes are



TABLE 1.3

## Occupation of Males, by Father's Occupation, 1957

		Occupation of Male Respondents (In percentages and mobility ratios) <sup>a</sup>						
Occupation of Respondent's Father	Professional	Business	White Collar	Skilled Manual	Semi- Skilled	Unskilled	Farmer	N (100.0%)
Professional	40.4%	19.1%	12.8%	19.1%	2.1%	4.3%	2.1%	47
	(4.81)	(1.45)	(.91)	(.72)	(.12)	(.47)	(.18)	
Business	18.3	25.8	22.5	15.0	12.5	1.7	4.2	120
	(2.18)	(1.96)	(1.61)	(.57)	(.72)	(.18)	(.36)	
White Collar	20.3	17.4	24.6	20.3	10.1	5.8	1.4	69
	(2.41)	(1.32)	(1.76)	(.77)	(.59)	(.64)	(.13)	
Skilled Manual	8.5	13.6	15.6	42.2	14.6	4.5	1.0	199
	(1.02)	(1.03)	(1.11)	(1.59)	(.84)	(.50)	(.09)	
Semi-Skilled	2.3	6.3	17.2	28.9	32.8	10.2	2.3	128
	(.28)	(.47)	(1.23)	(1.09)	(1.90)	(1.12)	(.20)	
Unskilled	1.5	6.1	10.6	36.4	27.3	15.2	3.0	66
	(.18)	(.46)	(.76)	(1.37)	(1.58)	(1.66)	(.26)	
Farmer	2.5	11.2	8.4	21.6	16.5	13.5	26.4	394
	(.30)	(.85)	(.60)	(.81)	(.95)	(1.48)	(2.29)	
All Respondents (N's)	86	135	143	271	177	93	118	1023
Summary Mobility Measures: Per cent mobile:								
Observed							70.0%	
Structural movement							27.0	
Circulation							43.0	
Full-equality model							84.8	
Cramer's V							.246	

<sup>a</sup> Cell entries in parentheses are mobility ratios, defined as the ratio of the observed cell frequency to the cell frequency expected under conditions of full equality of opportunity.

<sup>b</sup> Some rows do not total to exactly 100.0% because of rounding.



TABLE 1.4

Mobility from Father's Occupation to Occupation in 1962, for  
 Males 25 to 64 Years Old: Ratios of Observed Frequencies to Frequencies  
 Expected on the Assumption of Independence

Father's Occupation	Respondent's Occupation in March, 1962												(17)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1. Professionals, self-employed	11.7	3.1	1.2	3.0	0.6	0.7	0.9	0.3	0.5	0.3	0.2	0.3	0.2	0.5	0.4	0.5
2. Professionals, salaried	2.3	3.1	1.6	1.9	0.7	1.2	1.1	0.5	0.6	0.2	0.7	0.6	0.5	0.1	0.2	0.1
3. Managers	2.5	2.2	2.5	2.0	1.1	0.7	0.8	0.7	0.6	0.4	0.3	0.3	0.5	0.2	0.1	0.1
4. Salesmen, other	2.9	1.7	2.7	4.1	1.3	0.9	2.2	0.4	0.8	0.4	0.3	0.5	0.3	0.0	0.2	0.2
5. Proprietors	2.6	1.3	2.3	1.9	2.3	1.0 <sup>a</sup>	2.1	0.5	0.7	0.8	0.5	0.5	0.5	0.2	0.3	0.2
6. Clerks	1.6	2.3	1.4	1.9	0.7	1.4	0.8	0.9	1.0 <sup>a</sup>	0.4	0.6	1.0 <sup>a</sup>	0.5	0.4	0.2	0.0
7. Salesmen, retail	0.5	1.3	1.8	2.8	1.6	1.0 <sup>a</sup>	1.7	0.8	0.5	0.6	0.9	0.7	0.8	0.1	0.7	0.0
8. Craftsmen, manufacturing	0.7	1.5	1.1	0.8	0.9	1.0	1.1	2.1	0.9	0.9	1.1	0.8	0.8	0.6	0.6	0.1
9. Craftsmen, other	0.6	1.1	1.2	1.2	0.9	1.2	1.0	1.1	1.7	0.9	0.8	1.2	0.8	0.6	0.6	0.2
10. Craftsmen, construction	0.6	0.7	0.9	0.8	1.2	1.3	0.5	1.4	1.1	2.8	0.8	0.9	0.5	1.0	0.2	0.4
11. Operatives, manufacturing	0.7	0.8	0.7	0.9	0.8	1.0 <sup>a</sup>	0.9	1.7	1.0 <sup>a</sup>	0.6	1.8	0.9	1.9	0.8	0.2	0.4
12. Operatives, other	0.4	1.1	0.6	0.8	0.9	1.0 <sup>a</sup>	0.9	1.0	1.3	1.0	1.0	1.2	1.7	1.0	0.2	0.7
13. Services	0.5	0.9	0.9	1.1	0.9	1.5	1.2	1.1	0.9	1.1	1.1	1.1	1.1	1.3	0.8	0.1
14. Laborers, manufacturing	0.0	0.6	0.7	0.2	0.5	0.7	0.5	0.5	1.5	0.8	0.6	1.8	1.2	1.7	3.3	0.5
15. Laborers, other	0.3	0.5	0.4	0.8	0.5	1.4	1.1	1.1	1.1	1.1	1.2	1.4	1.6	2.3	0.2	0.7
16. Farmers	0.4	0.4	0.5	0.4	0.9	0.7	0.7	0.8	0.8	0.9	1.2	1.2	1.3	1.3	2.3	2.3
17. Farm laborers	0.1	0.2	0.4	0.2	0.6	0.6	0.6	0.8	0.9	0.9	1.3	1.4	1.5	1.5	1.5	1.1

<sup>a</sup> Rounds to unity from above (other indices shown as 1.0 round to unity from below).



brought about by changes in occupational structure. The issue of whether the role of occupational inheritance is increasing or decreasing results in some disagreement amongst researchers. Intergenerational mobility trends brought about by changes in the occupational structure are also influenced by demographic, educational and economic forces [Ref. 5, 9]. A trend toward increased occupational mobility is supported by Featherman and Hauser [Ref. 9: p. 135].

#### D. THE MILITARY AS AN INTERGENERATIONAL OCCUPATION

In the past, studies of occupational inheritance in the military have focused on military leaders [Ref. 10], executives [Ref. 11], officers [Ref. 12], or military cadets [Ref. 10, 15]. Notable exceptions are the works of Moskos [Ref. 13] and Sharp and Biderman [Ref. 14]. Lieutenant Commander Robinson [Ref. 1] has summarized the results of studies of Intergenerational Succession in the U.S. Military in her thesis. By and large these studies indicate that military academy cadets and Regular Army junior officers are the groups with the highest percentages of sons with military fathers.

Generally, there is agreement that for the officer corps the military exhibits greater occupational inheritance than most civilian occupations [Ref. 16, 17]. Social and geographical isolation promote occupational inbreeding. Family tradition influences many officers' sons to pursue careers as military officers. The importance of family tradition



increases when social and political changes cause sharp reductions in the size of the military and in its attractiveness as a career for the general population [Ref. 17: p. 38]. Tradition in the United States is regarded as two generations of occupational continuity. Family support for military service or a military career need not be overt or even aggressive. A military father's effect on the decision of his son to enter the military is typically complex and subtle.

Faris [Ref. 18] recently analyzed recruitment from military families in the All-Volunteer Force. Using data from the National Longitudinal Survey, the 1976 Department of Defense Personnel Survey and the 1978 Department of Defense Survey of Officers and Enlisted Personnel, he concluded that, high school graduates whose fathers made a career of military service are about twice as likely as their peers to enlist in the military; by 1980, recruits whose fathers were career military could account for as much as 10% of the enlisted recruitment; approximately one-half of such enlisted recruits would be sons of commissioned officers; a strong intergenerational linkage for sons of long-term service officers exists with only small variations by branch of service; and that a substantial amount of recruitment to the All-Volunteer Force reflects intergenerational linkages as noted by a prevalence of military offspring in both enlisted and officer ranks. Lastly, Faris points out that military offspring provide an important source of high quality personnel, particularly for



enlisted recruits. He suggests that DoD might find it useful to consider the process by which intergenerational linkages are produced in the military and in particular identify and strengthen those features of military service which are associated with normative commitments to military service.



## II. METHODOLOGY

This thesis examined the Department of Defense (DoD) as an intergenerational occupation by determining the proportions of nonjuniors, other juniors, and career juniors within DoD at large. Nonjuniors are military personnel whose parents had no military experience. Parental military experience pertains to either or both of mother and father. If either or both parents served in the military, the respondent is classified as a junior, then depending on the length of parental military experience the respondent becomes either an other junior or a career junior. Other juniors are military members whose parent(s) had less than ten years military experience; career juniors are those personnel whose parents had more than ten years of military experience.

Secondly, the thesis examined whether juniors are represented in the military in similar proportions to their composition in the population at large. Immobility ratios were calculated for the aggregate military and subgroups based on rank, sex, race, and years of service. Comparative analysis of military immobility ratios with those of several civilian occupational categories determined the degree of intergenerational occupational inheritance within DoD.

Lastly, specific officer and enlisted subgroups were analyzed to determine if differential behavioral patterns



occur among the three classes of juniors. Specific socio-economic variables, satisfaction with and perceptions of the military and career and reenlistment intentions were examined to determine if significant differences exist amongst junior groups.

#### A. DATA BASE

To determine the proportions of nonjuniors, other juniors, and career juniors in DoD, data from the 1978 DoD Survey of Officers and Enlisted Personnel were examined. Data used are from Forms 2 and 4 of the Survey; Form 2 is for enlisted personnel and Form 4 for officer personnel. Forms 1 and 3 contain no questions on military experience of parents; therefore, neither of these forms were used in the research. Forms 2 and 4 contain a series of questions on military experience of family members. Complete details regarding the survey may be found in the 1978 DoD Survey of Officers and Enlisted Personnel: User's Manual and Codebook dated January 1981 [Ref. 19].

##### 1. Sample Procedure and Size

The DoD survey was fielded in late January 1979 to a world-wide sample of approximately 93,000 men and women in all four Services. The basic stratification variable for the survey was Service. Within each Service, the enlisted samples were stratified by years of service (YOS) and the officer samples by grade and sex. Additionally, the enlisted sample within the two YOS groupings, 0-4 years and 5-8 years was



further stratified by time remaining in enlistment contract (time to ETS). Supplemental samples of enlisted women and blacks were selected to permit special analyses. Officer and enlisted personnel stratification; the desired distributions of useable questionnaires (by service); and summaries of the number of fielded, required questionnaires for each of four questionnaire variants are given in the codebook [Ref. 19].

## 2. Sample Weighting

Weights were required because the sampling plan allowed for disproportionate sampling among subgroups in the DoD population. Two assumptions were made in calculating the weights for the survey. First, individuals in each population cell who recently reenlisted were excluded from the sample but were assumed to be similar in characteristics, experiences, and orientations to those included in the survey sample. Because of their assumed similarity, recently reenlisted individuals were included in the population total for the calculation of weights. The second assumption dealt with new accessions, those coming into the service after the sample had been selected but before the survey was administered. These new accessions were assumed to be different from those in the 0-4 year cell with more than one year to ETS and were excluded in the calculation of weights. The aforementioned assumptions imply that the population to which the survey was intended to generalize was the DoD population with



more than four months of service (five months for the Army) as of 31 March 1979. Table 2.1 shows the total Service population, the population to which the survey is to generalize, and the proportion of this latter population responding to the survey [Ref. 19].

### 3. Recode of Parental Military Experience Variables

The stratification of officer and enlisted respondents into various junior groups necessitated the recoding of a series of questions pertaining to the military experience of family members. Complete details about the recode program are included in Appendix A.

## B. PARTICIPATION RATES

Respondents were classified on the basis of parental military experience in one of three classifications; non-juniors, other juniors and career juniors. For example, a career junior would be a respondent who indicated that either his or her mother or father had served in the military for more than ten years. Percentages for each junior classification were determined and aggregated for the officer and enlisted DoD populations as they existed in June 1979. Separate analysis were undertaken for the enlisted DoD population and the DoD officer population.

The variable of interest for junior status is the number of years of parental military experience. Given the years of parental military service it was possible to determine the distribution of career juniors, other juniors and non-juniors for the sample or any subsample. Participation rates



TABLE 2.1

Relationship of Returned Questionnaires to DoD Population

As of 31 March 1979

	Army	Navy	Marine Corps	Air Force	DoD Total
<u>Enlisted</u>					
Total Strength	650,890	458,492	167,192	465,550	1,742,124
Generalizable Population <sup>a</sup>	613,469	439,734	157,717	446,525	1,657,445
Number of Returned Questionnaires	8,916	11,583	9,402	8,437	38,338
Proportion of Generalizable					
Pop. responding to Survey <sup>a</sup>	.015	.026	.060	.019	.023
<u>Officer</u>					
Total Strength	82,331	58,314	16,864	94,236	251,745
Generalizable Population <sup>a</sup>	80,922	58,170	16,863	93,776	249,731
Number of Returned Questionnaires	4,035	5,601	4,546	5,020	19,202
Proportion of Generalizable					
Pop. responding to Survey <sup>a</sup>	.050	.096	.270	.054	.077

<sup>a</sup>Generalizable population refers to individuals with more than 4 months of service (5 months for Army).

SOURCE: 1978 DoD Survey of Officers and Enlisted Personnel: User's Manual and Codebook, Ref. 19.



for each junior group can be calculated by dividing the number of juniors in each group by the number of respondents in that sample. For example, there are 2,673 Caucasian enlisted males in the DoD sample distributed as follows: 733 nonjuniors; 1,593 other juniors; and 347 career juniors. Participation rates for each junior classification are calculated as follows:  $733/2,673 = .274$  or 27.4% for Caucasian enlisted male nonjuniors;  $1,593/2,673 = .596$  or 59.6% for Caucasian enlisted male other juniors; and  $347/2,673 = .130$  or 13.0% for Caucasian enlisted male career juniors. DoD participation rates were computed for officer and enlisted subgroups stratified by sex, race, length of service, and branch of service.

#### C. IMMOBILITY RATIOS

Once the participation rates had been determined, an immobility ratio was calculated for the various officer and enlisted subgroups. The immobility ratio is, in effect, a measure of how much more likely juniors are than nonjuniors to enter the military than they would be if juniors and non-juniors entered in proportion to their share in the national population. Biderman and Haley [Ref. 20] developed estimates for the relative proportions of military juniors in the total population for various age cohorts. Because their study focused on career military personnel, the immobility ratios to be calculated were determined for career juniors, those whose parents had ten or more years of military service.



Immobility ratios will be calculated by dividing the age-specific career juniors' percentage by the percentage of juniors in the national population for that age group as estimated by Biderman and Haley. Using the first term Caucasian enlisted male career junior participation rate of 13% and the Biderman and Haley estimate of 4.6% for that age group, the immobility ratio is calculated as follows:

$$\text{IMMOBILITY RATIO} = 13/4.6 = 2.8.$$

This indicates that Caucasian career juniors are 2.8 times more represented in first-term enlistees than they are in the population at large.

To determine whether or not the military exhibits greater intergenerational occupational inheritance tendencies than other occupations, the military immobility ratios were compared to those for twelve occupational categories developed by Blau and Duncan Ref. 6.

#### D. SOCIOECONOMIC AND BEHAVIORAL DIFFERENCES

To test hypotheses related to differences among junior status groups, analysis was done on specific variables of interest. Officer and enlisted personnel were analyzed separately. It was expected that juniors, both other and career juniors, would differ from nonjuniors in a number of socioeconomic areas. Career and other juniors were expected to enter the military at an earlier age than nonjuniors due primarily to an earlier interest in the military and an



awareness of the military opportunities available. It was anticipated that a higher proportion of officer career juniors would receive their commissions from the service academies or ROTC scholarship programs than nonjuniors.

Father's education should be higher for career and other juniors due primarily to the availability of the G.I. Bill for those with military experience. Career and other juniors were expected to have a more positive perception of the military and be more satisfied with it than nonjuniors. Intent to remain in the military should be more prevalent amongst career and other juniors; it was expected that career and other juniors have greater paygrade expectations than non-juniors. The socioeconomic differences amongst junior groups should be reflected in all four years of service (YOS) groups.

Two multivariate techniques of analysis were utilized. First, Multiple Classification Analysis (MCA) was undertaken to determine what effect junior status has on dependent variables of interest. In the MCA, junior status was one of five independent variables to be studied; the other four independent variables included branch of service, sex, race and years of service (YOS) groupings. The specific inter-generational effects or dependent variables to be examined were as follows:

1. General Socioeconomic Information

- a. Entry age,
- b. Level of father's education,
- c. Level of respondent's education, and
- d. Method of commissioning for officers.



2. Satisfaction With and Perceptions of Military

- a. Attitude toward military life and current location, and
- b. Perceptions of morale at current location.

3. Career and Reenlistment Intentions

- a. Anticipated length of service,
- b. Expected pay grade, and
- c. Intentions to reenlist.

The second multivariate technique applied was discriminant analysis. It was used to statistically distinguish among the three junior status groups. Several discriminating variables that measure characteristics on which the groups were expected to differ were selected. The discriminating variables used were age when entered military, father's education, respondent's education, expected or anticipated pay grade, anticipated length of service, race, sex, length of service or years of service (YOS) group, branch of service, commission source for officer, and reenlistment intent for enlisted personnel. Discriminant analyses for officers and enlisted personnel were conducted separately.



### III. RESULTS OF DEMOGRAPHIC DATA ANALYSIS

Initially the DoD aggregate officer and enlisted populations were analyzed to determine the relative proportions of nonjuniors, other juniors and career juniors. The population was further stratified by sex, by race, by service, and by years of service to determine proportions of juniors for males vs. females, Blacks vs. Caucasians and four length of service groupings within each service.

#### A. PREVALENCE OF JUNIORS

##### 1. DoD Aggregate Officer and Enlisted Population

In June, 1979, the active duty services of DoD were comprised of 43% nonjuniors, 45% other juniors and 12% career juniors. The prevalence of juniors differs slightly across services. As depicted in Table 3.1, the Army has the greatest proportion of nonjuniors (46%), the lowest proportion of other juniors (40.5%), and the highest proportion of career juniors (13.5%) when compared to the other services. The Navy is characterized as the service with the greatest intergenerational occupational tendencies; 62% of all active duty Navy in June 1979 had parents with military experience. Only 10% of all Marines are career juniors, the lowest career junior proportion across the services. The Air Force is neither high nor low in any of the junior status categories, but it too exhibits strong intergenerational tendencies with approximately



TABLE 3.1  
Prevalence of Juniors Within DoD  
 (In %)

SERVICE	ARMY	NAVY	MARINE CORPS	AIR FORCE	DOD
Nonjr	46.0	38.2	41.5	43.0	42.7
Other Jr	40.5	49.3	48.6	44.8	44.8
Career Jr	13.5	12.5	9.9	12.2	12.5
Population	675,056	488,357	169,459	532,396	1,865,268

NOTE: The numbers in the columns are the proportion of the population in each junior status category. For example 46.0% or 310,526 Army Personnel were classified as nonjuniors.



57% of its active duty military classified as either other juniors or career juniors.

## 2. DoD Enlisted Population

Enlisted personnel account for approximately 87% of the DoD military population; hence, the proportions of enlisted nonjuniors, other juniors and career juniors depicted in Table 3.2 are virtually identical to the overall DoD population proportions.

Across services, the Army has the greatest proportion of enlisted nonjuniors with 47% while the Navy is low with 38%. Only 40% of all Army enlisted personnel are other juniors compared to nearly 50% for Navy. The Marine Corps, at 9%, has the lowest proportion of career juniors compared to almost 13% career enlisted juniors in the Army. In June, 1979, 57% of all enlisted personnel in DoD had parents that had experienced military service and 12% had either fathers or mothers with more than ten years of military service.

## 3. DoD Officer Population

The officer population exhibits slightly greater proportions of career juniors, see Table 3.3, compared to the enlisted population or the aggregate DoD population previously discussed. Approximately 16% of all officers are career juniors, 42% are other juniors and 42% are nonjuniors. The Air Force has the greatest proportion of nonjuniors with 47%, while both the Navy and Marine Corps are low with 37% non-juniors. Forty percent of all Air Force officers are other



TABLE 3.2  
Prevalence of Enlisted Juniors within DoD  
 (In %)

SERVICE	ARMY	NAVY	MARINE CORPS	AIR FORCE	DOD
Nonjr	46.8	38.4	42.0	42.1	42.9
Other Jr	40.4	49.6	48.9	45.9	45.1
Career Jr	12.8	12.0	9.1	12.0	12.0
Population	595,167	430,494	152,674	439,508	1,617,843

NOTE: The numbers in the columns are the proportion of the population in each junior status category. For example, 12.0% or 51,659 Navy Enlisted Personnel were classified as career juniors.



TABLE 3.3  
Prevalence of Officer Juniors within DoD  
 (In %)

SERVICE	ARMY	NAVY	MARINE CORPS	AIR FORCE	DOD
Nonjr	40.0	36.8	36.8	47.1	41.7
Other Jr	41.3	47.3	45.8	39.7	42.4
Career Jr	18.7	15.9	17.4	13.2	15.9
Population	79,889	57,863	16,785	92,888	247,425

NOTE: The numbers in the columns are the proportion of the population in each junior status category. For example, 42.4% or 104,908 of all officers in DoD were classified as other juniors.



juniors and 47% of the Navy officers are other juniors. Only 13% of all Air Force officers are career juniors compared to 19% career juniors in the Army. Generally the active duty officer ranks exhibit intergenerational occupational tendencies.

#### 4. Junior Status Analysis by Sex

In June, 1979, 62% of all female enlisted personnel on active duty came from families where either or both parents had served in the military. As depicted in Table 3.4, 16% of the females were career juniors compared to 12% career junior males. Nearly 44% of all female enlisted personnel in the Army were nonjunior compared to only 29% nonjunior females in the Navy. Proportions of female other juniors ranged from a low of 42% for Army to a high of 55% in the Navy. Only 10% of all Marine Corps enlisted females are career juniors while over 18% of the Air Force enlisted females have parent(s) with more than ten years military service.

Enlisted males are comprised of 43% nonjuniors, 45% other juniors and 12% career juniors; see Table 3.4. On average proportionately fewer males are other or career juniors when compared to females. Some 39% of the Navy enlisted males are nonjuniors compared to a high of 47% nonjuniors in the Army. Only 40% of the Army's enlisted males are other juniors while 49% of the Navy enlisted males are other juniors. The Marine Corps has 9% career junior enlisted males while the Army is high with almost 13%.



TABLE 3.4  
Enlisted Junior Status by Branch of Service by Sex  
 (In %)

SERVICE	MALES				
	ARMY	NAVY	MARINE CORPS	AIR FORCE	DOD
Nonjr	47.1	38.9	42.2	42.6	43.2
Other Jr	40.3	49.3	48.8	46.1	45.1
Career Jr	12.6	11.8	9.1	11.4	11.7
Population	549,330	410,403	147,958	400,553	1,508,244
SERVICE	FEMALES				
	ARMY	NAVY	MARINE CORPS	AIR FORCE	DOD
Nonjr	43.6	28.5	38.0	37.6	38.4
Other Jr	41.8	54.7	52.5	44.2	45.5
Career Jr	14.6	16.8	9.5	18.3	16.1
Population	44,543	19,899	4,287	38,636	107,365

NOTE: The numbers in the columns are the proportion of the population in each junior status category. For example, 48.8% or 72,204 enlisted Marine males were classified as other juniors.



Within DoD, 58% of the officer males and 62% of all officer females on active duty in June, 1979, have parents with military experience as seen in Table 3.5. Officer males have proportionately more career juniors than enlisted males; however, female junior status proportions are virtually identical for officers and enlisted personnel. The greatest difference occurs in the Marine Corps where 17% of the officer males and 23% of the officer females are career juniors. Only 9% of enlisted male and female Marines were in the career junior group.

The proportions of each junior status for male and female officers are summarized in Table 3.5. In general, the officer corps is comprised of slightly greater junior proportions than their enlisted counterparts.

##### 5. Junior Status Analysis by Race

The results of the stratification of enlisted juniors by race are summarized in Table 3.6. When analyzing the DoD enlisted population for intergenerational tendencies within different racial or ethnic groups, 61% of all Blacks are non-juniors compared to 35% Caucasian nonjuniors. Proportions of other juniors are 30% and 53% respectively for Blacks and Caucasians, and career junior proportions are 9% and 13% respectively. The Army has the highest proportion of non-junior enlisted Blacks with 64% compared to the Marines low of 54%. Some 32% of all Navy enlisted Caucasians are non-junior while the Air Force exhibits the highest proportion of



TABLE 3.5

Officer Junior Status by Branch of Service by Sex

(In %)

SERVICE	MALES				
	ARMY	NAVY	MARINE CORPS	AIR FORCE	DOD
Nonjr	40.2	37.2	37.1	47.3	42.0
Other Jr	41.1	47.0	45.8	39.5	42.2
Career Jr	18.7	15.8	17.1	13.2	15.8
Population	73,926	53,870	16,096	86,720	230,612
SERVICE	FEMALES				
	ARMY	NAVY	MARINE CORPS	AIR FORCE	DOD
Nonjr	37.5	31.2	31.2	43.6	38.0
Other Jr	43.8	51.2	45.5	42.4	45.1
Career Jr	18.7	17.6	23.3	14.0	16.9
Population	5,963	3,993	690	6,168	16,814

NOTE: The numbers in the columns are the proportion of the population in each junior status category. For example, 43.6% or 2,689 female officers in the Air Force are nonjuniors.



TABLE 3.6

Enlisted Junior Status by Branch of Service by Race  
 (In %)

SERVICE	BLACKS				CAUCASIANS			
	ARMY	NAVY	MARINE CORPS	AIR FORCE	DOD	ARMY	NAVY	MARINE CORPS
Nonjr	64.2	55.3	53.5	61.0	61.4	35.4	31.8	34.8
Other Jr	26.0	37.5	41.6	29.8	29.7	51.0	55.2	55.1
Career Jr	9.8	7.2	4.9	9.2	8.9	13.6	13.0	10.1
Population	175,559	39,904	28,689	65,653	309,805	331,709	324,037	101,125
								326,515
								1,083,386

NOTE: The numbers in the columns are the proportion of the population in each junior status category. For example, 55.2% or 178,868 Navy enlisted Caucasians are other juniors.



Caucasian enlisted nonjuniors with 37%. Only 5% of the Marine enlisted Blacks are career junior while 10% of all Caucasian enlisted Marines are career junior. Generally these proportions suggest that today's Black enlisted military come from predominately non-military experienced parents whereas the majority of Caucasian enlisted military have parents with military experience.

Stratification of the DoD officer population by race reveals that 54% of all Black officers on active duty in 1979 were nonjuniors while only 41% of their Caucasian counterparts had parents without military experience. The relative proportions of Black and Caucasian officers by junior status in each service are summarized in Table 3.7. Proportions of other juniors are fairly close for Black and Caucasian officer populations but the same is not true for career juniors. Some 16% of all Caucasian officers have parents with ten or more years military service, while only 6% of all Black officers are categorized as career juniors. Only 2% of all Black Air Force officers are career junior while some 13% of their Caucasian Air Force counterparts are in the same junior group. The Navy has the highest proportion of Black career junior officers with 17%, while 19% of all Caucasian Army officers are career juniors. The Navy is also the only service with a greater proportion of Black career junior officers than Caucasian career juniors. Why this would be the case for the Navy is not readily apparent.



TABLE 3.7

Officer Junior Status by Branch of Service by Race  
 (In %)

SERVICE	BLACKS				CAUCASIANS				DOD
	ARMY	NAVY	MARINE CORPS	AIR FORCE	DOD	ARMY	NAVY	MARINE CORPS	
Nonjr	57.7	55.0	58.1	47.4	53.7	39.0	36.0	35.7	46.8
Other Jr	36.8	28.0	28.4	50.3	40.4	42.0	48.2	46.7	40.1
Career Jr	5.5	17.0	13.5	2.4	5.9	19.0	15.8	17.5	13.1
Population	5,014	914	702	3,795	10,425	70,494	54,630	15,325	85,039
									225,488

NOTE: The numbers in the columns are the proportion of the population in each junior status category. For example, 2.1% or 250 Black Air Force officers are career juniors.



Comparison of the Black officer and enlisted populations reveal that only 54% of all Black officers are non-juniors, while 61% of all Black enlisted have parents without military experience. Forty percent of all Black officers are other juniors compared to only 30% for Black enlisted but 9% of all Black enlisted are career juniors, while only 6% of all Black officers have parents with ten or more years military service. Comparison between Caucasian officer and enlisted populations indicates that a greater proportion of enlisted personnel have parents with military experience than their officer counterparts.

#### 6. Junior Status Analysis by Years of Service

Stratification by years of service (YOS) was accomplished by dividing the DoD population into four different terms of service groups as depicted in Table 3.8.

Table 3.8  
Years of Service (YOS) Stratification

GROUP	YOS
I	Less than 5 yrs.
II	More than 5 yrs and less than 10 yrs.
III	More than 10 yrs and less than 20 yrs.
IV	More than 20 yrs.

Results of the DoD enlisted junior analysis by years of service are presented in Table 3.9. The relative proportions



TABLE 3.9

Enlisted Junior Status by Branch of Service by Years of Service  
(In %)

SERVICE	GROUP I				GROUP II					
	ARMY	NAVY	MARINE CORPS	AIR FORCE	DOD	ARMY	NAVY	MARINE CORPS	AIR FORCE	DOD
Nonjr	42.8	32.2	40.1	30.4	36.9	44.2	33.9	40.2	37.8	39.5
Other Jr	42.7	54.0	50.6	53.7	49.1	42.6	53.3	49.7	49.8	47.9
Career Jr	14.5	13.8	9.3	15.9	14.0	13.2	12.8	10.1	12.4	12.6
Population	331,709	236,237	108,078	181,050	857,074	138,496	90,551	24,489	106,661	360,197

NOTE: The numbers in the columns are the proportion of the population in each junior status category. For example, 42.6% or 58,999 Army enlisted in YOS Group II are nonjuniors.



TABLE 3.9 CONTINUED

Enlisted Junior Status by Branch of Service by Years of Service  
 (In %)

SERVICE	GROUP III				GROUP IV			
	ARMY	NAVY	MARINE CORPS	AIR FORCE	ARMY	NAVY	MARINE CORPS	AIR FORCE
Nonjr	57.4	53.7	51.5	54.3	54.9	74.4	76.1	72.1
Other Jr	34.0	38.5	41.4	37.8	37.0	23.2	20.3	80.3
Career Jr	8.6	7.8	7.1	7.9	8.1	2.4	3.6	22.1
Population	97,569	85,060	15,533	116,498	314,660	22,163	14,839	3,489
								70,533
								30,042

NOTE. The numbers in the columns are the proportion of the population in each junior status category. For example, 57.4% or 56,005 Army enlisted in YOS Group III are nonjuniors.



within junior categories differs greatly between nonjuniors and other juniors for YOS groups I and II compared to YOS groups III and IV. In fact, nonjunior proportions increase from 37% for YOS group I to 77% for YOS group IV. Other junior proportions continually decline from 49% for YOS group I to 20% for YOS group IV while career junior proportions vary inversely with years of service and decline continuously from 14% to 2.5%.

Proportions of juniors within each YOS group vary considerably across services while considerable variation between YOS groupings is also noted for the three junior status categories. In June, 1979, 77% of all active duty enlisted military with 20 or more years of service came from families where neither parent had military experience. Conversely, only 37% of all enlisted military with five or less years military service are classified as nonjuniors.

In analyzing the DoD officer population by years of service stratification (see Table 3.10), groups I and II portray vastly different junior status proportions than the same groups for either the enlisted population or the aggregate DoD population. Fewer nonjuniors are observed for groups I and II while other juniors comprise 53% of the groups, and some 20% to 22% of all officers in groups I and II are career juniors. The parental military experience factor is obviously important for junior officers when nearly three out of every four officers with less than ten years of service have parents who served in the military. However, these proportions change



TABLE 3.10

Officer Junior Status by Branch of Service by Years of Service  
 (In %)

SERVICE	GROUP I				GROUP II			
	ARMY	NAVY	MARINE CORPS	AIR FORCE	DOD	ARMY	NAVY	MARINE CORPS
Nonjr	26.8	23.0	21.3	27.4	25.6	25.7	22.5	24.9
Other Jr	48.8	56.4	58.9	51.3	52.3	51.3	56.2	53.9
Career Jr	24.4	20.6	19.8	21.3	22.1	23.0	21.3	51.8
Population	22,418	16,675	5,573	21,111	65,777	20,814	12,844	3,992
								23,933
								61,583

NOTE: The numbers in the columns are the proportion of the population in each junior status category. For example, 19.8% or 1,103 Marine officers in YOS Group I are career juniors.



TABLE 3.10 CONTINUED

Officer Junior Status by Branch of Service by Years of Service  
 (In %)

SERVICE	GROUP III				GROUP IV			
	ARMY	NAVY	MARINE CORPS	AIR FORCE	ARMY	NAVY	MARINE CORPS	AIR FORCE
Nonjr	53.9	47.1	49.2	60.3	54.7	66.6	63.6	70.6
Other Jr	32.1	41.4	34.9	30.7	33.8	24.6	28.7	21.2
Career Jr	14.0	11.5	15.9	8.9	11.5	8.8	7.7	8.2
Population	28,560	19,962	5,011	35,998	89,531	7,599	7,798	2,016
								10,939
								28,352

NOTE: The numbers in the columns are the proportion of the population in each junior status category. For example, 28.7% or 2,238 Navy officers in YOS Group IV are other juniors.



drastically within each junior status classification when analyzing groups III and IV, officers with more than ten years of service. Approximately 70% of all active duty officers with twenty or more years in the military (Group IV) are nonjuniors, while 24% are other juniors and 6% are career juniors.

As in the case of the enlisted population, junior status proportions vary considerably across services within each YOS group as well as between YOS groups. Contrary to popular belief the vast majority of all active duty military with twenty or more years of service emanate from families whose parents did not experience military service.

## 7. Summary

DoD exhibits strong intergenerational tendencies as evidenced by the prevalence of other and career juniors in the military in June, 1979. Parental military experience influences proportionately more females than males in their pursuit of the military as an occupation. The majority of Blacks in the military come from families whose parents did not serve in the military while the opposite tendency holds for Caucasians on active duty. Parental military experience, as determined by the proportions of other juniors and career juniors, is much more prevalent amongst active duty military with less than ten years of service than it is for those military with ten or more years service. While the military overall exhibits strong intergenerational occupational tendencies, three out of every four on active duty with twenty or more years in the military have parents who did not serve.



## B. DOD PARTICIPATION RATES AND IMMOBILITY RATIOS

Biderman and Haley [Ref. 20] estimated the percentages of career juniors, in age specific total population cohorts. They used male distributions only; however it is assumed that the female distributions approximate the male population. Biderman's and Haley's estimates of juniors as a percent of the national population are included in Figure 1.

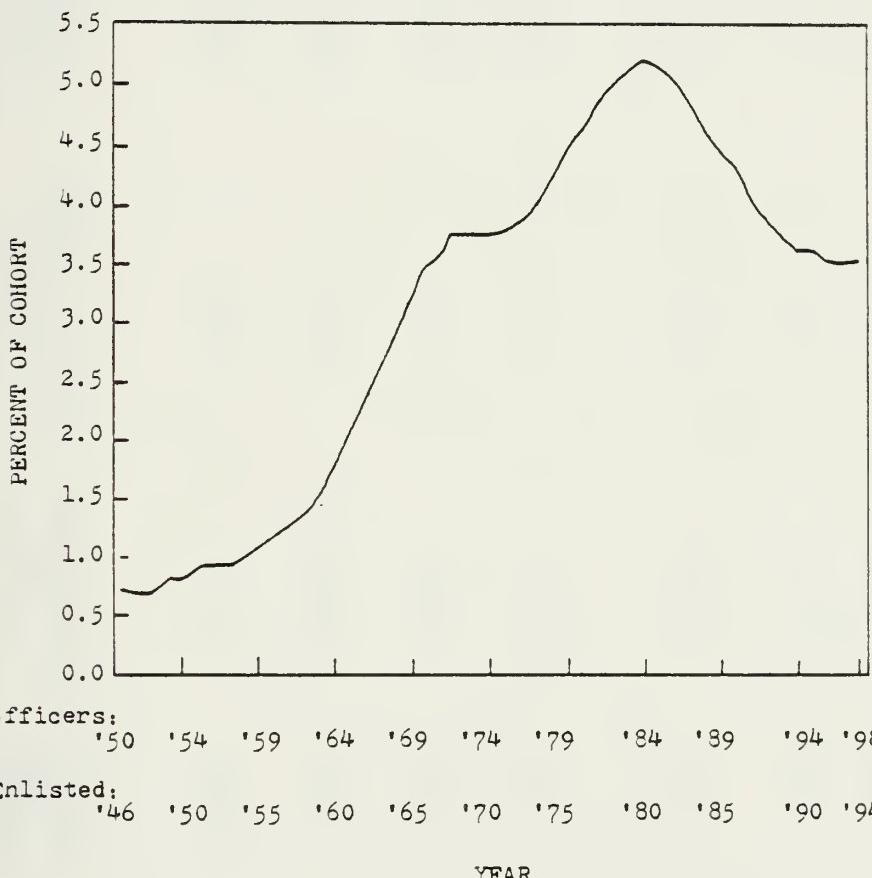
The DoD officer and enlisted populations were stratified by years of service into groups I thru IV. Within each YOS group, the proportions of nonjuniors, other juniors and career juniors were determined for Caucasian male and female enlisted personnel and officers. The DoD participation rates and immobility ratios for each YOS group are depicted in Table 3.11. Graphic illustrations for both the DoD enlisted sample and the DoD officer sample are provided in Figures 2 and 3 respectively. The vertical axis represents the immobility ratios depicted in the last column of Table 3.11 and the mean age in 1979 is represented by the horizontal axis.

With the exception of the IV YOS group, Caucasian enlisted females exhibit greater military intergenerational tendencies than their Caucasian male counterparts. Parental military experience, it would seem, is more likely to influence females in pursuit of the military as an occupation than their male counterparts. Exposure to the military at an early age and the availability of information about what might be considered a very nontraditional job choice for a woman appear to provide the impetus for Caucasian females to



FIGURE 1

Estimates of Male Career Juniors as a Percent of the National Population in Assumed Modal Age Span for Service Entry as Officers, 1950-1998, and as Enlisted Persons, 1946-1994



NOTES: Ratio of juniors to national population for any year of age is estimated by ratio of the military career population to the national population in the age span 26-33 years older than the juniors. "Military career population" is the combined active duty and retired population in 1976. Male distributions only were used. Horizontal scales assume Age 19 as modal age of entry for enlisted persons and Age 23 for officers.

SOURCE: Biderman and Haley. [Ref. 20]



TABLE 3.11

DoD Participation Rates and Immobility Ratios

YOS Groups	Number in Survey	Percentage of Nonjuniors	Percentage of Other Juniors	Percentage of Career Juniors	B/H Proportion	Immobility ratio
<u>First Term</u>						
Caucasian Enlisted Males	2673	27.4	59.6	13.0	4.6	2.8
Caucasian Enlisted Females	1126	28.2	56.2	15.6	4.6	3.4
Caucasian Of-ficer Males	1523	21.8	56.7	-	3.8	5.7
Caucasian Of-ficer Females	629	24.2	55.5	20.3	3.8	5.3
<u>Second Term</u>						
Caucasian Enlisted Males	2975	31.3	54.4	14.3	3.7	3.9
Caucasian Enlisted Females	291	32.0	52.6	15.5	3.7	4.2
Caucasian Of-ficer Males	1465	24.6	54.8	20.6	3.6	5.7
Caucasian Of-ficer Females	376	32.7	47.6	19.7	3.6	5.8



TABLE 3.11 CONTINUED

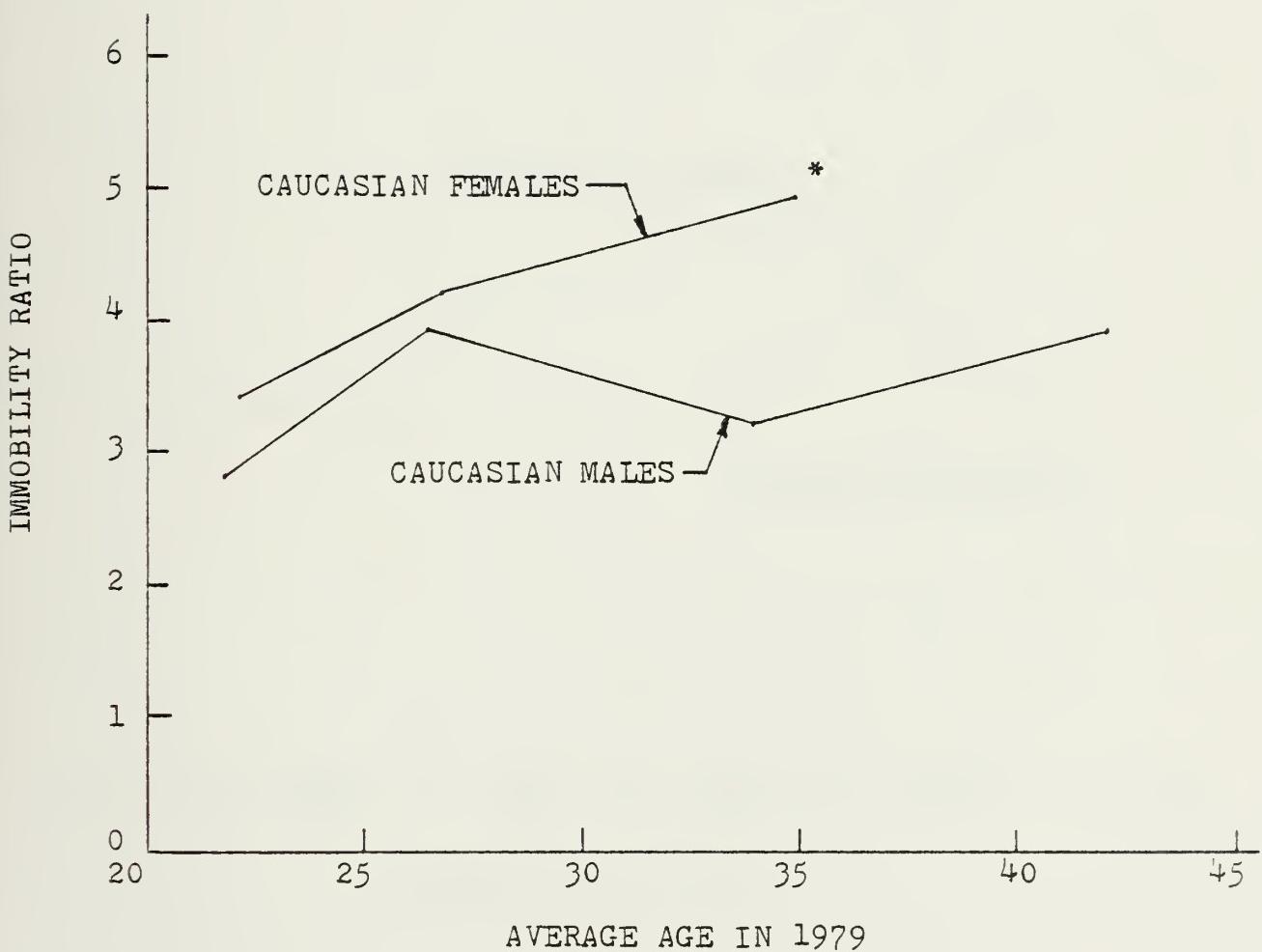
DOD Participation Rates and Immobility Ratios

<u>YOS Groups</u>	<u>Number in Survey</u>	<u>Percentage of Nonjuniors</u>	<u>Percentage of Other Juniors</u>	<u>Percentage of Career Juniors</u>	<u>B/H Proportion</u>	<u>Immobility ratio</u>
<u>Third Term</u>						
Caucasian Enlisted Males	3386	48.7	42.6	8.7	2.7	3.2
Caucasian Enlisted Females	53	52.8	34.0	13.2	2.7	4.9
Caucasian Of-ficer Males	3104	54.6	33.4	12.0	1.5	8.0
Caucasian Of-ficer Females	254	59.1	33.1	7.9	1.5	5.3
<u>Fourth Term</u>						
Caucasian Enlisted Males	570	73.5	22.6	3.9	1.0	3.9
Caucasian Enlisted Females	9	77.8	22.2	0	1.0	0
Caucasian Of-ficer Males	1222	68.4	24.3	7.3	.8	9.1
Caucasian Of-ficer Females	37	62.2	29.7	8.1	.8	10.1



FIGURE 2

ENLISTED  
OCCUPATIONAL INHERITANCE

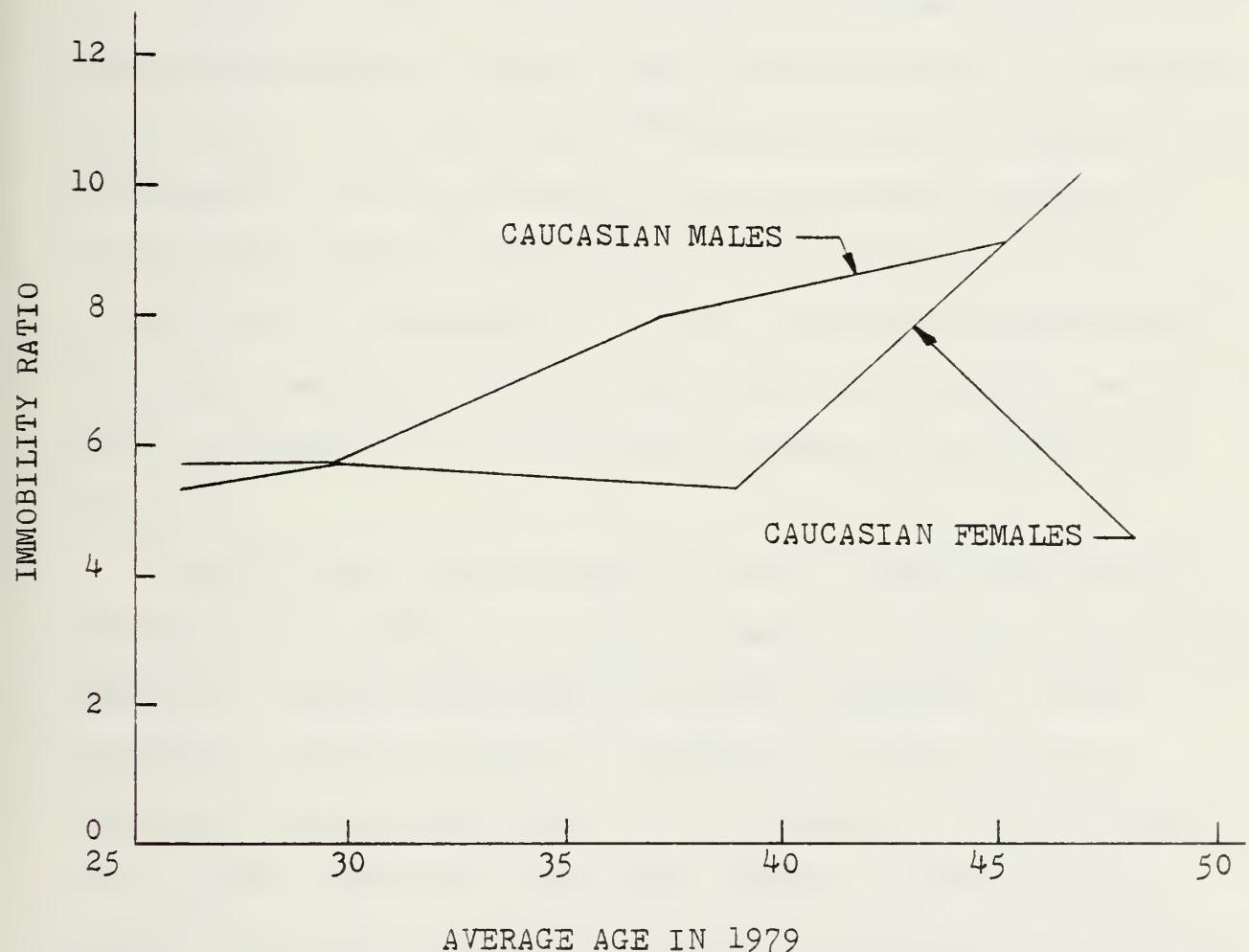


\* Due to the small sample size for fourth term Caucasian enlisted females the enlisted female occupational inheritance plot includes first, second and third term.



FIGURE 3

OFFICER  
OCCUPATIONAL INHERITANCE





enlist in the military. Generally the degree of military occupational inheritance increases over YOS groups except in the case of female YOS group IV for which there were no enlisted females.

Comparative analysis of the officer and enlisted samples reveals that officers generally exhibit greater military occupational inheritance tendencies than do enlisted personnel. In other words, the proportions of officer career juniors generally are greater than the proportions of enlisted career juniors throughout the YOS groups as seen in Table 3.11. The degree of military occupational inheritance continually increases for officer males from 5.7 in YOS group I to 9.1 in YOS group IV. Analysis of officer females shows generally increasing immobility ratios except for YOS group III, which declines slightly to 5.3 and then increases to 10.1 for YOS group IV.

To gain further perspective on the military as an inter-generational occupation, it is necessary to compare the military immobility ratios with those for other occupations. The immobility ratios for twelve occupational categories are depicted in Table 3.12 [Ref. 6]. Generally the DoD officer and enlisted immobility ratios are higher than the civilian ratios; notable exceptions are those involving professionals (20.55), proprietors (10.53), farmers and farm managers (24.75), or farm laborers and foreman (25.24). Based on these comparisons, it appears that the military exhibits greater



TABLE 3.12  
Immobility Ratios\* in 12-by-12 Occupational  
 Mobility Classifications

<u>Occupation Category</u>	Father's Occupa- tion to son's First Occupation	Father's Occupa- tion to son's Current Occupation
Professionals, Self-employed	20.55	19.56
Professionals, Salaried	2.96	3.02
Managers	3.28	2.89
Proprietors	10.53	3.25
Sales Workers	1.89	2.34
Clerical Workers	1.15	1.07
Craftsmen, Foremen and Kindred Workers	0.67	0.59
Operatives	1.24	1.04
Service Workers	2.74	2.26
Laborers, Excluding Farm and Mine	1.99	1.82
Farmers and Farm Managers	24.75	20.69
Farm Laborers and Foremen	25.24	17.71

\* An immobility ratio of 1 indicates sons of fathers in that occupation are no more likely than other sons to choose the occupation. Sons of Sales Workers, for example, are 1.89 times more likely than sons of fathers with a different occupation to choose sales work as their first occupation.

SOURCE: Blau & Duncan, Ref. 6.



intergenerational occupational inheritance tendencies than most salary or wage earning civilian occupations. Career juniors enter the military services in much greater proportions than expected based on their proportions in the national population.



#### IV. MULTIVARIATE ANALYSIS

Two different multivariate techniques were used to test and analyze behavioral and socioeconomic differences among junior status groups. Multiple classification analysis was used to determine the relationship of junior status to specific dependent variables of interest, e.g., age when entered service, father's education, respondent's education, satisfaction with military life, morale, likeliness to reenlist and source of commission. Discriminant analysis was used to statistically distinguish among junior status groups and correctly classify a respondent as a nonjunior, other junior or career junior. Separate multiple classification and discriminant analyses were performed for officer and enlisted personnel.

##### A. MULTIPLE CLASSIFICATION ANALYSIS

The Statistical Package for the Social Sciences (SPSS) was utilized for the multiple classification analysis. The output obtained consisted of the grand mean of the dependent variable and a table of category means for each factor or independent variable expressed as deviations from the grand mean. The deviation values or category effects appeared in (1) unadjusted form and (2) adjusted form, after accounting for variation by all other independent variables. These two types of output show the magnitude of category effects for a given factor or independent variable that remains after removal of variation



due to other factors has been partialled out. Statistical significance of mean differences among junior status categories was determined by the F-Ratio and the proportion of variation explained by each independent variable was determined by eta squared ( $\eta^2$ ).

To isolate the relationship of junior status to behavior and attributes of interest the effects of branch of service, length of service, sex and race were controlled for. The beta statistic in the adjusted column of an MCA table is the partial-correlation ratio and can be viewed as a standardized partial regression coefficient.

#### 1. Enlisted Multiple Classification Analysis Results

##### a. Entry Age

As shown in Table 4.1, the mean age of entry for all our enlisted service members was nineteen. The largest difference in mean age at entry is attributed to sex. Females enter the enlisted ranks about a year later than males and sex accounts for approximately 3% of the variation in mean age at entry. Policies requiring females to have a high school diploma prior to entering military service might account for the age differential between sexes. Caucasians are the only ethnic group who enter military service at an earlier age (18.86 years) than the grand mean of 19.

When controlling for the effects of branch of service, length of service, sex, and race, the adjusted deviations from mean age at entry change slightly from the unadjusted



TABLE 4.1

Age when Entered Service for Enlisted Personnel

GRAND MEAN = 19.00

INDEPENDENT VARIABLES	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	6908	0.13		0.12		
OTHER JR	7020	-0.10		-0.07		
CAREER JR	1699	-0.11		-0.21		
			0.05		0.06	24.26 ***
<b>BRANCH OF SERVICE</b>						
ARMY	3543	0.37		0.36		
NAVY	4783	-0.07				
MC	3762	-0.41				
AF	3539	0.17				
			0.14			100.252 ***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	5435	0.20				
YOS GRP II	4630	0.06				
YOS GRP III	4764	-0.20				
YOS GRP IV	798	-0.46				
			0.09			23.976 ***
<b>SEX</b>						
MALE	13672	-0.14				
FEMALE	1955	0.96				
			0.18			427.173 ***
<b>RACE</b>						
BLACK	2916	0.26				
AMER INDIAN-						
ALASKAN	185	0.07				
HISPANIC	714	0.21				
ASIAN	431	1.41				
CAUCASIAN	10896	-0.14				
OTHER	485	0.01				
			0.14			60.116 ***
<b>R SQUARED</b>						
					0.075	

\*\*\* Statistically significant at the .001 level.



deviations for the junior status variables. Career juniors still enter military service earlier than other juniors and nonjuniors; 18.79, 18.93, and 19.21 respectively. Analysis of the F-ratios indicate that statistically significant differences in mean age at entry are observed for each independent variable, including junior status. The additive effects of junior status, branch of service, years of service, sex and race account for 7.5% (R SQUARED) of the variation in mean age at entry.

b. Father's Education

On average, enlisted personnel on active duty in June 1979 come from families where the father has only an eleventh grade education as shown in Table 4.2. Looking at YOS groups, father's education level has continually improved over the past twenty years. Among specific racial groups, father's education ranges from a low of 9.41 years for Hispanic to a high of 11.16 years for Caucasians.

After controlling for the effect of branch of service, length of service, sex, and race, career juniors' fathers have well over two more years of education, on average, than fathers of nonjuniors. Junior status accounts for more of the variation in father's education, 7.3%, than does any of the other independent variables. The level of career juniors' father's education (12.43 years) may be attributed, in part, to the educational benefits derived from the G.I. Bill. Twelve percent of the variation in mean years of father's education is accounted for by the additive effects of the independent variables.



TABLE 4.2

Father's Education for Enlisted Personnel<sup>1</sup>

GRAND MEAN = 10.88

INDEPENDENT VARIABLES	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	5850	-0.98		-0.75		
OTHER JR	6277	0.49		0.33		
CAREER JR	1513	1.76		1.55		
			0.27		0.22	342.612 ***
<b>BRANCH OF SERVICE</b>						
ARMY	3106	-0.34				
NAVY	4209	0.25				
MC	3223	-0.09				
AF	3102	0.09				
			0.07			7.784 ***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	4795	0.86				
YOS GRP II	4040	0.05				
YOS GRP III	4135	-0.81				
YOS GRP IV	670	-1.46				
			0.22			147.659 ***
<b>SEX</b>						
MALE	11912	-0.11				
FEMALE	1728	0.76				
			0.08			.249
<b>RACE</b>						
BLACK	2459	-0.79				
AMER INDIAN-						
ALASKAN	168	-0.29				
HISPANIC	591	-1.47				
ASIAN	373	-0.01				
CAUCASIAN	9623	0.28				
OTHER	426	0.41				
			0.15			45.164 ***
<b>R SQUARED</b>						
					0.120	

<sup>1</sup>Measured from 1 to 20; first grade to 8 or more years of college respectively.

\*\*\*Statistically significant at the .001 level.



c. Respondent's Education

Enlisted personnel on active duty in June, 1979, had 12.54 years of education. Very little deviation in mean years of education is observed among enlisted junior status groups as noted in Table 4.3. Branch of service accounts for 2.56% of the variation in mean education with the Air Force on the upper end of the scale and the Marine Corps on the low end. The additive effects of the independent variables account for 5% of the variation in mean years of education for enlisted personnel.

d. Satisfaction with Military Life

As shown in Table 4.4, little variation of mean levels of satisfaction occur among junior status groups after controlling for the influence of the other variables. The differences are not statistically significant.

Little difference in mean levels of satisfaction is noted across services; however years of service groups account for 12.25% of the variation in mean levels of satisfaction. Enlisted personnel in YOS group IV, those with twenty or more years of military service, appear much more satisfied with the military than the younger enlisted in YOS group I. Mean level of satisfaction is directly related to years of military service; the longer one has been in, the more satisfied he or she seems to be. This might be explained, in part, by the self selection process of reenlisting in the military. Those who have the greatest levels of satisfaction would be expected to reenlist while lesser satisfied personnel



TABLE 4.3

Enlisted Respondent's Education<sup>1</sup>

GRAND MEAN = 12.54

INDEPENDENT VARIABLES	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	7001	-0.02		-0.04		
OTHER JR	7090	-0.01		0.02		
CAREER JR	1715	0.09		0.09		
			0.03		0.04	11.045***
<b>BRANCH OF SERVICE</b>						
ARMY	3578	0.12				
NAVY	4828	-0.11				
MC	3820	-0.22				
AF	3580	0.27				
			0.16			122.645***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	5495	-0.21				
YOS GRP II	4677	0.06				
YOS GRP III	4819	0.15				
YOS GRP IV	815	0.14				
			0.13			115.452***
<b>SEX</b>						
MALE	13834	-0.02				
FEMALE	1972	0.12				
			0.04			107.663*
<b>RACE</b>						
BLACK	2964	-0.06				
AMER INDIAN-						
ALASKAN	189	-0.02				
HISPANIC	727	-0.13				
ASIAN	432	0.22				
CAUCASIAN	11003	0.01				
OTHER	491	0.13				
			0.05			6.447***
<b>R SQUARED</b>						
					0.050	

<sup>1</sup>Measured from 1 to 20; first grade to 8 or more years of college respectively.

\*Statistically significant at the .05 level.

\*\*\*Statistically significant at the .001 level.



TABLE 4.4

Satisfaction with Military Life for  
Enlisted Personnel<sup>1</sup>

GRAND MEAN = 4.09

INDEPENDENT VARIABLE	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	6903	0.22		0.03		
OTHER JR	7005	-0.18		-0.03		
CAREER JR	1702	-0.14		0.03		
			0.10		0.02	2.306
<b>BRANCH OF SERVICE</b>						
ARMY	3532	0.14				
NAVY	4773	-0.33				
MC	3759	0.18				
AF	3546	0.12				
			0.12			62.144***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	5407	-0.74				
YOS GRP II	4616	-0.10				
YOS GRP III	4776	0.70				
YOS GRP IV	811	1.36				
			0.35			768.243***
<b>SEX</b>						
MALE	13658	0.01				
FEMALE	1952	-0.08				
			0.02			193.729*
<b>RACE</b>						
BLACK	2907	0.14				
AMER INDIAN-						
ALASKAN	184	-0.43				
HISPANIC	710	0.26				
ASIAN	426	0.40				
CAUCASIAN	10901	-0.05				
OTHER	482	-0.26				
			0.07			23.43***
<b>R SQUARED</b>						
					0.151	

<sup>1</sup>Satisfaction measured on a seven point scale; 1 is very dissatisfied and 7 is very satisfied.

\*Statistically significant at the .05 level.

\*\*\*Statistically significant at the .001 level.



might choose to leave military service. Black enlisted are more satisfied with the military than are Caucasian enlisted. Fifteen percent of the variation in mean levels of satisfaction is explained by the five independent variables.

e. Morale

Career juniors have very little difference in perceived morale at their current duty stations from either nonjuniors or other junior's as shown in Table 4.5. When controlling for the effects of branch of service, years of service, sex and race, the difference in mean levels of morale among junior groups is reduced, as indicated by the beta statistic, to 0.03.

The greatest perceptual differences in assessment of morale occur between YOS groups. As was the case for mean levels of satisfaction, YOS group IV perceive considerably higher levels of morale than YOS group I enlisted personnel. Some of this variation may emanate from the difference in the level of the organization in which one would find YOS group I members versus YOS group IV members. Those in YOS group I would generally be working down at the unit level while enlisted personnel with twenty or more years would normally fill supervisory or leadership positions at higher levels within their respective services. Approximately 8% of the variation in mean levels of morale is explained by the length of military service. As noted from the R squared statistic, only 9.2% of the variation in mean levels of morale is



TABLE 4.5

Enlisted Morale at Current Location<sup>1</sup>

GRAND MEAN = 3.48

INDEPENDENT VARIABLE	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	6904	0.18		0.05		
OTHER JR	7028	-0.13		-0.04		
CAREER JR	1704	-0.18	0.10	-0.04	0.03	5.985***
<b>BRANCH OF SERVICE</b>						
ARMY	3512	-0.01				
NAVY	4789	-0.09				
MC	3770	0.18				
AF	3565	-0.06	0.07			24.066***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	5412	-0.49				
YOS GRP II	4626	-0.12				
YOS GRP III	4792	0.49				
YOS GRP IV	806	1.05	0.29			403.007***
<b>SEX</b>						
MALE	13688	0.05				
FEMALE	1948	-0.35	0.08			1.539
<b>RACE</b>						
BLACK	2881	0.11				
AMER INDIAN-						
ALASKAN	186	-0.13				
HISPANIC	714	0.12				
ASIAN	431	0.32				
CAUCASIAN	10939	-0.03				
OTHER	485	-0.31	0.06			12.072***
<b>R SQUARED</b>						
					0.092	

<sup>1</sup>Morale measured on a seven point scale; 1 is very low and 7 is very high.

\*\*\*Statistically significant at the .001 level.



accounted for by the additive effects of junior status, branch of service, YOS group, sex and race.

f. Total Years of Intended Military Service

On average enlisted personnel on active duty in June, 1979, expected to serve 14.13 years before leaving the military, as shown in Table 4.6. Navy enlisted personnel intend to leave the military with 13.05 years of service compared to enlisted personnel in the other three services, who expect to serve more than fourteen years. Possible reasons for the low Navy expectations might be the quality of life; sea duty may be a deterrent to the desire for a military career. Lengthy family separations might explain the Navy's lower length of service intentions. Female enlisted personnel expect to leave the military seven years earlier than their male counterparts. These large differences are due mainly to the very large differences in current length of services between males and females, as evidenced by the very small differences in the gender deviations after controlling for years of service.

Almost none of the variability in intended years of service can be accounted for by junior status. We would have expected career junior to have substantially lengthier intended service. The adjusted difference here is less than three months.



TABLE 4.6

Total Years of Service Intended for  
Enlisted Personnel

GRAND MEAN = 14.19

INDEPENDENT VARIABLE	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	6826	1.47		0.03		
OTHER JR	6916	-1.12		-0.06		
CAREER JR	1664	-1.38		0.13		
			0.16		0.01	1.196
<b>BRANCH OF SERVICE</b>						
ARMY	3470	0.58				
NAVY	4715	-1.14				
MC	3704	0.09				
AF	3517	0.86				
			0.10			37.137 ***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	5263	-7.85				
YOS GRP II	4522	0.03				
YOS GRP III	4811	6.63				
YOS GRP IV	810	11.46				
			0.78			6695.012 ***
<b>SEX</b>						
MALE	13509	0.83				
FEMALE	1897	-5.88				
			0.27			7.944 *
<b>RACE</b>						
BLACK	2854	-0.23				
AMER INDIAN-						
ALASKAN	175	0.38				
HISPANIC	705	-1.22				
ASIAN	423	0.81				
CAUCASIAN	10781	0.09				
OTHER	468	0.33				
			0.04			3.647 *
<b>R SQUARED</b>						
					0.609	

\*Statistically significant at the .05 level.

\*\*\*Statistically significant at the .001 level.



#### g. Pay Grade Expectations

Nonjunior enlisted personnel anticipate lower pay grade achievements than their career junior and other junior counterparts. As shown in Table 4.7 enlisted personnel expect to leave the service as an E6 or E7. Consistent with Table 4.6, career juniors have slightly higher paygrade expectations, but not substantially higher than other and nonjuniors. Since pay grade is, in part, a function of years of service it would follow that enlisted career juniors, who expect to serve longer would also have somewhat higher paygrade expectation. Thirty-four percent of the variation in final pay grade expectations is explained by the additive effects of junior status, branch of service, years of service, sex and race.

#### h. Reenlistment Intentions

Junior groups did not differ significantly in their intent to reenlist without a bonus, as shown in Table 4.8. Navy enlisted personnel are the least likely to reenlist while Air Force enlisted are the most likely of enlisted personnel in the different services to reenlist for no bonus. Enlisted personnel with more time in service have a higher propensity to reenlist than those with fewer years in the military. Those with more time invested tend to be career oriented while others with less service may not anticipate making the military a career. Enlisted females are less likely to reenlist than males, which is consistent with length of service and final



TABLE 4.7

Final Paygrade Expected for  
Enlisted Personnel<sup>1</sup>

GRAND MEAN = 6.56

INDEPENDENT VARIABLE	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	6979	0.21		-0.02		
OTHER JR	7058	-0.18		-0.01		
CAREER JR	1694	-0.14		0.13		
			0.09		0.02	5.849 ***
<b>BRANCH OF SERVICE</b>						
ARMY	3572	0.20				
NAVY	4797	-0.16				
MC	3811	0.33				
AF	3551	-0.34				
			0.13			158.292 ***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	5461	-1.52				
YOS GRP II	4638	0.34				
YOS GRP III	4815	1.13				
YOS GRP IV	817	1.60				
			0.57			2319.152 ***
<b>SEX</b>						
MALE	13778	0.14				
FEMALE	1953	-0.99				
			0.18			3.405 *
<b>RACE</b>						
BLACK	2965	0.00				
AMER INDIAN-						
ALASKAN	188	-0.19				
HISPANIC	723	-0.24				
ASIAN	430	-0.02				
CAUCASIAN	10938	0.02				
OTHER	487	0.06				
			0.03			5.897 ***
<b>R SQUARED</b>						
					0.342	

<sup>1</sup>Pay grade measured as follows: E1 (01); E2 (02); E3 (03); E4 (04); E5 (05); E6 (06); E7 (07); E8 (08); E9 (09); W1 (11); W2 (12); W3 (13); W4 (14).

\*Statistically significant at the .05 level.

\*\*\*Statistically significant at the .001 level.



TABLE 4.8

Likeliness to Reenlist-No Bonusfor Enlisted Personnel<sup>1</sup>

GRAND MEAN = 4.70

INDEPENDENT VARIABLE	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	5146	0.45		0.01		
OTHER JR	5849	-0.32		-0.04		
CAREER JR	1470	-0.30		0.13		
			0.09		0.01	1.389
<b>BRANCH OF SERVICE</b>						
ARMY	2785	0.30				
NAVY	3790	-0.78				
MC	2955	0.22				
AF	2935	0.51				
			0.13			50.313***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	4392	-2.39				
YOS GRP II	4255	-0.25				
YOS GRP III	3495	3.12				
YOS GRP IV	323	2.05				
			0.53			1508.212***
<b>SEX</b>						
MALE	10800	0.23				
FEMALE	1665	-1.50				
			0.14			11.755***
<b>RACE</b>						
BLACK	2281	0.36				
AMER INDIAN-						
ALASKAN	137	-0.32				
HISPANIC	555	0.01				
ASIAN	311	0.32				
CAUCASIAN	8804	-0.10				
OTHER	377	-0.11				
			0.04			13.676***
<b>R SQUARED</b>						
					0.297	

<sup>1</sup>Measured on an eleven point scale; 0 is no change for reenlistment and 10 for certain to reenlist.

\*\*\*Statistically significant at the .001 level.



pay grade expectations. Of the five independent variables tested, race accounts for the smallest proportion of variation in likeliness to reenlist when no bonus payment is given. The cumulative effects of these variables account for 30% of the variation observed for likelihood to reenlist.

#### i. Summary

Junior status explains very little variation for the dependent variables examined after controlling for the effects of branch of service, sex, race and length of service. The one exception is father's education where junior status accounts for more variation (7.3%) than any of the other independent variables. Policies requiring females to have a high school diploma prior to entering military service might explain why enlisted females are about one year older than enlisted males at service entry.

Career juniors' fathers have over two more years of education than fathers of nonjuniors after controlling for the effects of branch of service, sex, race and length of service. Very little deviation in mean years of respondent's education is explained by junior status. Mean levels of satisfaction with the military and assessment of morale differ very little among junior status groups. The greatest perceptual differences in morale assessment occur between YOS groups; enlisted personnel with the most years of service perceive higher levels of morale than enlisted personnel with fewer years of service. Hardly any of the variability



in intended years of service can be accounted for by junior status. Career juniors have slightly higher pay grade expectations than other juniors and nonjuniors. Junior groups do not differ significantly in their intent to reenlist in the military without a bonus. Enlisted personnel with more time in service have a higher propensity to reenlist than those with fewer years in the military.

## 2. Officer Multiple Classification Analysis Results

### a. Entry Age

The mean age of entry for officers was 21.59, as shown in Table 4.9. After controlling for the effect of branch of service, sex, race and length of service, career juniors entered the military 1.39 years earlier than non-juniors. An earlier entry age for career juniors might result from exposure to or an earlier interest in the military as an occupation. Navy and Marine Corps officers enter military service at an earlier age than Army and Air Force officers. Reasons for this entry-age difference across services is not readily apparent.

Female officers are 1.65 years older, on average, than their male counterparts at service entry. Older age at service entry for female officers may reflect an initial choice of another job or advanced schooling, with the military being a later, secondary choice. Asian officers enter military service at 26.55 years of age compared to the grand mean age at entry of 21.59 years. This large age differential



TABLE 4.9

Age when Entered Service for Officers

GRAND MEAN = 21.59

INDEPENDENT VARIABLE	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	4057	0.29		0.56		
OTHER JR	3867	-0.10		-0.28		
CAREER JR	1421	-0.55		-0.83		
			0.09		0.17	151.666***
<b>BRANCH OF SERVICE</b>						
ARMY	1991	0.28				
NAVY	2713	-0.09				
MC	2209	-0.82				
AF	2432	0.61				
			0.17			52.668***
<b>SEX</b>						
MALE	7888	-0.36				
FEMALE	1457	1.97				
			0.27			393.268**
<b>RACE</b>						
BLACK	352	0.17				
AMER INDIAN-ALASKAN	25	-0.15				
HISPANIC	103	0.95				
ASIAN	100	4.96				
CAUCASIAN	8605	-0.08				
OTHER	160	0.45				
			0.17			44.497***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	2432	1.31				
YOS GRP II	2029	-0.16				
YOS GRP III	3566	-0.27				
YOS GRP IV	1318	-1.45				
			0.28			238.840*
R SQUARED						
					0.185	

\*Statistically significant at the .05 level.

\*\*Statistically significant at the .01 level.

\*\*\*Statistically significant at the .001 level.



may result from the number of Asian officers who are commissioned in the medical or health professional branches which require additional years of education prior to entry into the military. In the past twenty years mean age at service entry has increased from 20.14 years to 22.90 years; this represents a 13.7% increase. A greater age at service entry may be a function of changing policies; for example, officers are now required to have a college education prior to commissioning. In the 1960s the Army and Marine Corps did not require officer candidates to have a college education; hence OCS graduates entered the military at an earlier age than officers graduating from the service academies and ROTC programs. The additive effect of junior status, branch of service, sex, race and years of service explain 18.5% of the variation in mean age at service entry.

b. Father's Education

As shown in Table 4.10, career junior fathers have 2.57 more years of education than nonjunior fathers after controlling for the effects of branch of service, sex, race and length of service. Junior status accounts for more of the variation in father's education, 8.4%, than does any of the other independent variables. The level of career juniors' father's education (14.43 years) may be attributed to the educational benefits of the G.I. Bill. Little differences in mean years of father's education result from branch of service or sex. Blacks' fathers have significantly



TABLE 4.10

Father's Education for Officers<sup>1</sup>

GRAND MEAN = 12.66

INDEPENDENT VARIABLE	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	3702	-1.07		-0.80		
OTHER JR	3584	0.36		0.17		
CAREER JR	1326	2.02		1.77		
			0.29		0.23	249.281 ***
<b>BRANCH OF SERVICE</b>						
ARMY	1834	0.03				
NAVY	2527	0.38				
MC	2002	-0.20				
AF	2249	-0.27		0.07		
						7.865 ***
<b>SEX</b>						
MALE	7278	-0.05				
FEMALE	1334	0.26		0.03		
						8.596 ***
<b>RACE</b>						
BLACK	304	-2.68				
AMER INDIAN- ALASKAN	23	-1.79				
HISPANIC	96	-1.86				
ASIAN	90	0.75				
CAUCASIAN	7946	0.13				
OTHER	153	-0.34		0.15		
						44.353 ***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	2259	1.06				
YOS GRP II	1895	0.43				
YOS GRP III	3263	-0.52				
YOS GRP IV	1195	-1.27		0.22		
						79.730 ***
<b>R SQUARED</b>						
					0.130	

<sup>1</sup>Measured from 1 to 20; first grade to 8 or more years of college respectively.

\*\*\*Statistically significant at the .001 level.



less education, only ten years, when compared to Asians and Caucasians. Mean years of father's education is inversely related with years of service; the longer the officer has been in the military, the less educated is his or her father.

c. Respondent's Education

Officers on active duty in June, 1979, had 16.84 years of education as shown in Table 4.11. Junior status explained very little variation in mean levels of education after controlling for the effects of branch of service, sex, race and length of service. Analysis by branch of service shows that Marine Corps Officers have significantly less education than officers in the other branches of the military. Sex, race and years of service account for only 3% of the variation in mean years of education. The additive effect of all five independent variables account for 7.4% of the variation in respondent's education.

d. Satisfaction with Military Life

As shown in Table 4.12, when controlling for the effects of branch of service, sex, race and length of service, virtually no difference in mean levels of satisfaction is observed among the three junior status groups. Length of service explains about 5% of the variation in mean levels of satisfaction. As was the case for the enlisted personnel, the number of years invested in the military as an occupation tends to underlie one's assessment or perception of satisfaction. Four of the five independent variables differ



TABLE 4.11

Officer Respondent's Education<sup>1</sup>

GRAND MEAN = 16.84

INDEPENDENT VARIABLE	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	4081	0.13		0.09		
OTHER JR	3888	-0.11		-0.07		
CAREER JR	1425	-0.08	0.08	-0.05	0.05	10.877 ***
<b>BRANCH OF SERVICE</b>						
ARMY	1997	0.27				
NAVY	2724	0.07				
MC	2219	-0.54				
AF	2454	0.19	0.20			153.179 ***
<b>SEX</b>						
MALE	7936	0.07				
FEMALE	1458	-0.37	0.10			134.828 ***
<b>RACE</b>						
BLACK	354	-0.20				
AMER INDIAN-ALASKAN	26	-0.61				
HISPANIC	105	-0.09				
ASIAN	101	0.87				
CAUCASIAN	8644	0.00				
OTHER	164	0.03	0.07			8.990 ***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	2436	-0.21				
YOS GRP II	2035	-0.14				
YOS GRP III	3588	0.25				
YOS GRP IV	1335	-0.08	0.13			30.117 ***
<b>R SQUARED</b>						
					0.074	

<sup>1</sup>Measured from 1 to 20; first grade to 3 or more years of college respectively.

\*\*\*Statistically significant at the .001 level.



TABLE 4.12

Satisfaction with Military Life for Officers<sup>1</sup>

GRAND MEAN = 4.74

INDEPENDENT VARIABLE	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	4042	0.14		-0.01		
OTHER JR	3867	-0.10		0.00		
CAREER JR	1419	-0.12		0.01		
			0.07		0.00	0.050
<b>BRANCH OF SERVICE</b>						
ARMY	1976	-0.05				
NAVY	2702	-0.04				
MC	2210	0.25				
AF	2440	-0.14				
			0.09			26.871 ***
<b>SEX</b>						
MALE	7881	-0.00				
FEMALE	1447	0.02				
			0.01			67.983 *
<b>RACE</b>						
BLACK	347	0.20				
AMER INDIAN-						
ALASKAN	25	-0.02				
HISPANIC	104	0.17				
ASIAN	99	-0.08				
CAUCASIAN	8590	0.00				
OTHER	163	-0.49				
			0.05			6.441 ***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	2422	-0.44				
YOS GRP II	2020	-0.19				
YOS GRP III	3566	0.14				
YOS GRP IV	1320	0.72				
			0.22			166.956 ***
<b>R SQUARED</b>						
					0.066	

<sup>1</sup>Satisfaction measured on a seven point scale; 1 is very dissatisfied and 7 is very satisfied.

\*Statistically significant at the .05 level.

\*\*\*Statistically significant at the .001 level.



significantly; yet only 6.6% of the variation in mean levels of satisfaction is explained by the five independent variables.

e. Morale

Results of officers' assessment of morale at their duty station in June, 1979, are shown in Table 4.13. Statistically insignificant differences in mean level of morale are observed among junior status groups. Air Force officers perceive significantly lower levels of morale than other service officers; an explanation for this is not readily apparent. Female officers perceive significantly lower levels of morale than their male counterparts; however, sex explains only 2.25% of the total variation in mean levels of morale in the officer corps.

Officers with ten or more years of service perceive higher levels of morale than officers with fewer years of military service. Mean levels of morale might be a function of position within the military organization or a function of the self-selection process whereby those officers with the most military service choose to remain on active duty and would, it seems, perceive higher levels of morale than non-career oriented officers.

f. Total Years of Intended Military Service

The officers on active duty in June, 1979, expected to stay in the military for 19.16 years, as shown in Table 4.14. After controlling for the effects of branch of service, race, sex and length of service, career juniors intend to



TABLE 4.13  
Officer Morale at Current Location<sup>1</sup>

GRAND MEAN = 4.14

INDEPENDENT VARIABLE	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	4067	0.10		-0.03		
OTHER JR	3867	-0.06		0.03		
CAREER JR	1420	-0.12		-0.02		
			0.06		0.02	1.774
<b>BRANCH OF SERVICE</b>						
ARMY	1984	0.02				
NAVY	2713	-0.00				
MC	2210	0.33				
AF	2447	-0.31				
			0.15			59.273 ***
<b>SEX</b>						
MALE	7905	0.10				
FEMALE	1449	-0.54				
			0.15			57.844 *
<b>RACE</b>						
BLACK	350	0.14				
AMER INDIAN-						
ALASKAN	26	0.05				
HISPANIC	103	0.18				
ASIAN	101	-0.26				
CAUCASIAN	3611	0.00				
OTHER	163	-0.45				
			0.05			7.033 ***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	2432	-0.43				
YOS GRP II	2017	-0.20				
YOS GRP III	3579	0.18				
YOS GRP IV	1326	0.60				
			0.23			125.657 ***
<b>R SQUARED</b>						
					0.084	

<sup>1</sup>Morale measured on a seven point scale; 1 is very low and 7 is very high.

\*Statistically significant at the .05 level.

\*\*\*Statistically significant at the .001 level.



TABLE 4.14

Total Years of Service Intended for Officers

GRAND MEAN = 19.16

INDEPENDENT VARIABLE	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	4021	1.79		-0.19		
OTHER JR	3822	-1.56		-0.12		
CAREER JR	1395	-0.88		0.89		
			0.19		0.05	16.819***
<b>BRANCH OF SERVICE</b>						
ARMY	1962	-0.25				
NAVY	2682	-0.76				
MC	2185	0.96				
AF	2409	0.18				
			0.08			9.056***
<b>SEX</b>						
MALE	7825	0.89				
FEMALE	1413	-4.95				
			0.26			81.613***
<b>RACE</b>						
BLACK	346	-1.45				
AMER INDIAN-						
ALASKAN	26	3.69				
HISPANIC	102	-0.73				
ASIAN	94	-4.34				
CAUCASIAN	8511	0.12				
OTHER	159	-0.68				
			0.07			3.027***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	2361	-7.79				
YOS GRP II	1993	-1.47				
YOS GRP III	3562	2.82				
YOS GRP IV	1322	8.52				
			0.66			1912.202***
<b>R SQUARED</b>						
					0.444	

\*\*\* Statistically significant at the .001 level.



stay in the service about one year longer than officer non-juniors. The difference between mean years of intended service between males and females is reduced from 5.84 years to 1.69 years when controlling for the effects of the other independent variables. These large differences are due to the large differences in current lengths of service between males and females, as evidenced by the smaller differences in the gender deviations after controlling for years of service. The additive effects of the five independent variables explain 44.4% of the variation in expected total years of service.

#### g. Pay Grade Expectations

On average, officers expect to attain the rank of major or lieutenant colonel during their military careers. Little, if any, difference in mean pay grade expectations is observed among junior status groups, as shown in Table 4.15. While statistically significant, differences in mean pay grade expectations attributed to branch of service, sex, race and length of service are minimal. The additive effects of the five independent variables explain 15.4% of the total variation in officer's final pay grade expectations.

#### h. Officer Procurement Programs

To inspect the relationship of junior status and officer sources of commission, a crosstabulation shown in Table 4.16 was undertaken. Approximately 70% of the officers receiving commissions from the service academies are career juniors or other juniors and 75% of the ROTC scholarships are



TABLE 4.15

Final Pay Grade Expected for Officers<sup>1</sup>

GRAND MEAN = 24.76

INDEPENDENT VARIABLE	N	UNADJUSTED DEVIATION	ETA	ADJUSTED DEVIATION	BETA	F-RATIO
<b>JUNIOR STATUS</b>						
NONJR	4042	0.19		-0.00		
OTHER JR	3838	-0.19		-0.05		
CAREER JR	1409	-0.02		0.14		
			0.13		0.05	11.806 ***
<b>BRANCH OF SERVICE</b>						
ARMY	1954	0.09				
NAVY	2703	-0.09				
MC	2199	-0.01				
AF	2433	0.04				
			0.05			11.185 ***
<b>SEX</b>						
MALE	7860	0.10				
FEMALE	1429	-0.52				
			0.16			43.762 ***
<b>RACE</b>						
BLACK	342	-0.03				
AMER INDIAN-						
ALASKAN	25	0.16				
HISPANIC	99	0.17				
ASIAN	98	0.07				
CAUCASIAN	8564	0.00				
OTHER	161	-0.14				
			0.02			4.958 ***
<b>LENGTH OF SERVICE</b>						
YOS GRP I	2394	-0.80				
YOS GRP II	1999	-0.05				
YOS GRP III	3566	0.29				
YOS GRP IV	1330	0.75				
			0.38			414.454 ***
<b>R SQUARED</b>						
					0.154	

<sup>1</sup>Pay grade measured as follows: 2LT (21); 1LT (22); CPT (23); MAJ (24); LTC (25); COL (26); BG (27); MG (28); LTG (29); GENERAL (30).

\*\*\*Statistically significant at the .001 level.



TABLE 4.16

## Junior Status by Officer Procurement Program

Officer Procurement Programs	Service Academies	OCS-OTS	ROTC	ROTC Scholarship	Aviation OC
Junior Status					
NONJR	325*	104.3 44.7	84.3 48.5	196 24.8	373 57.3
OTHER JR	462 43.2	100.7 43.1	64.5 37.2	393 49.7	209 32.1
CAREER JR	283 26.4	285 12.2	249 14.3	202 25.5	69 10.6
TOTAL	1070	2335	1737	791	651
continued		Direct Appointment	PLTN LDR CRS	Medical & Health Prof.	Total
NONJR	513 50.7	245 37.0	120 40.4	433 49.1	4091 43.4
OTHER JR	392 38.8	296 44.7	134 45.1	371 42.1	3909 41.4
CAREER JR	106 10.5	121 18.3	43 14.5	77 8.8	1435 15.2
TOTAL	1011	662	297	881	9435

\* Number of nonjunior officers receiving their commission from the service academies.

\*\* The proportion of nonjuniors receiving their commission from the service academies, the column percent.



distributed among career and other juniors. By comparison, only 55% of OCS-OTS officers are juniors. The proportion of career juniors receiving commissions from the service academies and ROTC scholarship programs is over double the career junior mean proportion for all other officer procurement programs. Availability of information, exposure to and an earlier interest in the military and awareness of scholarship options might explain, in part, the 3 to 1 ratio of juniors versus nonjuniors receiving commissions from the service academies and ROTC scholarship programs.

i. Summary

In summary, parental military experience is significantly related to most of the dependent variables of interest examined; however, junior status accounts for less than 9% of the total variation for any one dependent variable. When controlling for the effects of the other four independent variables, differences in means among junior status groups are reduced considerably, as expected. Officer career juniors enter the military at an earlier age than nonjunior and other junior officers. Fathers of career juniors are better educated than nonjunior fathers and other junior fathers, possibly because of the educational benefits available to military veterans under the G.I. Bill. Junior status explains little, if any, of the variation in assessment of morale or mean levels of satisfaction among officers on active duty in June, 1979.



Officer junior groups differ slightly on total years of military service anticipated and mean levels of pay grade expectations. Proportionately more career juniors receive commissions from the service academies and the ROTC scholarship programs than officer nonjuniors and officer other juniors. An earlier interest in the military, an awareness of the scholarship options available, and preferential admittance of sons and daughters of academy graduates to the service academies would account for the comparatively high proportions of juniors receiving commissions from these two officer-procurement programs.

#### B. DISCRIMINANT ANALYSIS

Discriminant analysis was used to statistically distinguish among the three junior status categories. Ten discriminating variables were selected; these variables were selected on the premise that each of them measured characteristics on which junior groups were expected to differ. Junior status was the criterion variable. Specific analysis and classification techniques were applied to measure the success with which the discriminating variables actually discriminate among junior groups when combined into the discriminant functions. Results of the officer and enlisted discriminant analyses are reported separately. Subprogram DISCRIMINANT in the Statistical Package for the Social Sciences (SPSS) was used for these analyses.

##### 1. Enlisted Discriminant Analysis Results

The DoD enlisted sample of 11,299 consists of 4,500 nonjuniors, 5,488 other juniors and 1,311 career juniors. Group



means for each discriminant variable are shown in Table 4.17. Interpretation for many of the means is straightforward; however, some require explanation. The branch of service variable reveals that approximately 22% of the enlisted sample are in the Army, 30% in the Navy, 24% in the Marine Corps and 24% in the Air Force. Looking at nonjuniors shows approximately 25% of all nonjunior enlisted personnel in the sample are in the Army, 28% in the Navy and so on. The race variable was recoded to reflect BLACKS=1 and CAUCASIANS=0; other racial groups were coded as missing. Twenty-one percent of the enlisted sample is Black while the proportion of Blacks within each junior group is 32% for nonjuniors, 15% for other juniors and 13% for career juniors. Eighty-six percent of the enlisted sample are males. Years of service (YRSOFSVC) is actually the total number of months on active duty at the time the survey was administered; hence, the average enlisted person had approximately 7.8 years of military service. Intent to reenlist (REENINT) was recoded zero for uncertain and one for certain; therefore, 45% of all enlisted personnel were certain about reenlisting. The propensity to reenlist differed among junior groups. Approximately 50% of all nonjuniors are positively inclined towards reenlisting while only 41% of all career juniors positively inclined towards reenlisting in the military.

The WILKS Stepwise method was used to select independent variables for entry into the analysis on the basis of their discriminating power. The criterion was the overall



TABLE 4.17

Enlisted Sample and Group Means

NUMBER OF CASES BY GROUP <sup>1</sup>		NUMBER OF CASES		LABEL
JUNIOR STATUS	UNWEIGHTED	WEIGHTED		
Nonjr	4500	4500.0		Nonjr
Other Jr	5488	5488.0		Other Jr
Career Jr	1311	1311.0		Career Jr
TOTAL	11299	11299.0		
GROUP MEANS				
JUNIOR STATUS	DADSEDUG	ENTRYAGE	RESPEDUC	EXPPAYGR
Nonjr	8.27	18.72	12.46	6.78
Other Jr	9.99	18.75	12.51	6.41
Career Jr	11.22	18.67	12.60	6.43
TOTAL	9.45	18.73	12.50	6.56
JUNIOR STATUS	AF	ARMY	NAVY	MC
Nonjr	0.23	0.25	0.28	0.24
Other Jr	0.24	0.20	0.32	0.24
Career Jr	0.26	0.23	0.31	0.20
TOTAL	0.24	0.22	0.30	0.24
JUNIOR STATUS	RACE	SEX	YRSOFSVC	REENLINT
Nonjr	0.31	0.88	108.21	0.50
Other Jr	0.15	0.85	85.79	0.41
Career Jr	0.13	0.82	80.10	0.41
TOTAL	0.21	0.85	94.06	

<sup>1</sup>16774 (UNWEIGHTED) cases were processed.

5475 of these were excluded from the analysis.

5150 had missing or out-of-range group codes.

5139 had at least one missing discriminating variable.

186 had both.

11299 (UNWEIGHTED) cases will be used in the analysis.



multivariate F ratio for the test of differences among the junior group centroids. The variable that maximized the F ratio also minimized Wilk's lambda, a measure of group discrimination. The stepwise variable-selection criteria and selection rules are shown in Table 4.18. The maximum F ratio to enter a discriminant variable and the minimum F ratio to remove a variable were set equal to .05. A maximum of two discriminant functions was specified, and the minimum cumulative percent of variance was set at 95%. The prior probabilities were set equal to the proportion of respondents in each junior status group. Before a variable is tested for selection during the stepwise procedure, its tolerance level is checked. If a variable with very low tolerance is used, large rounding errors may occur while computing the discriminant coefficients. This would lead to faulty estimates and inaccurate classifications. The default minimum tolerance was set at .001. Note that after step zero none of the discriminant variables is included in the analysis. The analysis required eight steps and at each step the discriminant variables were statistically tested and selected for inclusion or exclusion. A summary of the stepwise selection process is provided in Table 4.19.

Table 4.20 describes the two discriminant functions. Geometrically, these functions correspond to coordinate axes in a plot of individuals and junior group centroids. A discriminant function is a linear composite of an individual's values of the discriminating variables that equals the



TABLE 4.18

Wilks Stepwise Selection Criterion  
for Enlisted Sample

ANALYSIS NUMBER 1

## STEPWISE VARIABLE SELECTION

SELECTION RULE: MINIMIZE WILKS' LAMBDA

MAXIMUM NUMBER OF STEPS .....	26
MINIMUM TOLERANCE LEVEL .....	0.00100
MAXIMUM SIGNIFICANCE OF F TO ENTER .....	0.05000
MINIMUM SIGNIFICANCE OF F TO REMOVE .....	0.05000

## CANONICAL DISCRIMINANT FUNCTIONS

MAXIMUM NUMBER OF FUNCTIONS .....	2
MINIMUM CUMULATIVE PERCENT OF VARIANCE ...	95.00
MAXIMUM SIGNIFICANCE OF WILKS' LAMBDA ....	1.0000

## PRIOR PROBABILITIES

GROUP	PRIOR	LABEL
1	0.39827	NONJR
2	0.48571	OTHER JR
3	0.11603	CAREER JR
TOTAL	1.00000	

VARIABLES NOT IN THE ANALYSIS AFTER STEP 0

VARIABLE	MINIMUM TOLERANCE	SIGNIF. OF TOLERANCE	F TO ENTER	WILKS' LAMBDA
DADSEDUC	1.00	1.00	0.0000	0.959
ENTRYAGE	1.00	1.00	0.7567	0.999
RESPEDUC	1.00	1.00	0.0046	0.999
EXPPAYGR	1.00	1.00	0.0000	0.993
LGTHSVC	1.00	1.00	0.0000	0.987
ARMY	1.00	1.00	0.0000	0.997
NAVY	1.00	1.00	0.0000	0.997
MC	1.00	1.00	0.0005	0.998
AF	1.00	1.00	0.0476	0.999
RACE	1.00	1.00	0.0000	0.959
SEX	1.00	1.00	0.0000	0.997
YRSOFSVC	1.00	1.00	0.0000	0.968
REENLINT	1.00	1.00	0.0000	0.993



TABLE 4.19

Enlisted Summary Table

STEP	ACTION ENTERED REMOVED	VARS IN	WILKS' LAMBDA	SIG.
1	RACE	1	0.959	0.0000
2	YRS0FSVC	2	0.924	0.0000
3	DADSEDUC	3	0.899	0.0
4	ARMY	4	0.898	0.0
5	MC	5	0.897	0.0
6	SEX	6	0.896	0.0
7	EXPPAYGR	7	0.896	0.0
8	RESPEDUC	8	0.895	0.0



TABLE 4.20  
Canonical Discriminant Functions  
For Enlisted Sample

FUNCTION	EIGENVALUE	PERCENT OF VARIANCE	CUMULATIVE PERCENT	CANONICAL CORRELATION
----------	------------	---------------------	--------------------	-----------------------

1*	0.11180	95.92	95.92	0.317
2	0.00475	4.08	100.00	0.069

AFTER FUNCTION	WILKS' LAMBDA	CHI-SQUARED	D.F.	SIGNIFICANCE
0	0.895	1250.3	16	0.0
1	0.995	53.558	7	0.0000

\* Marks the 1 canonical discriminant function to be used in the remaining analysis.



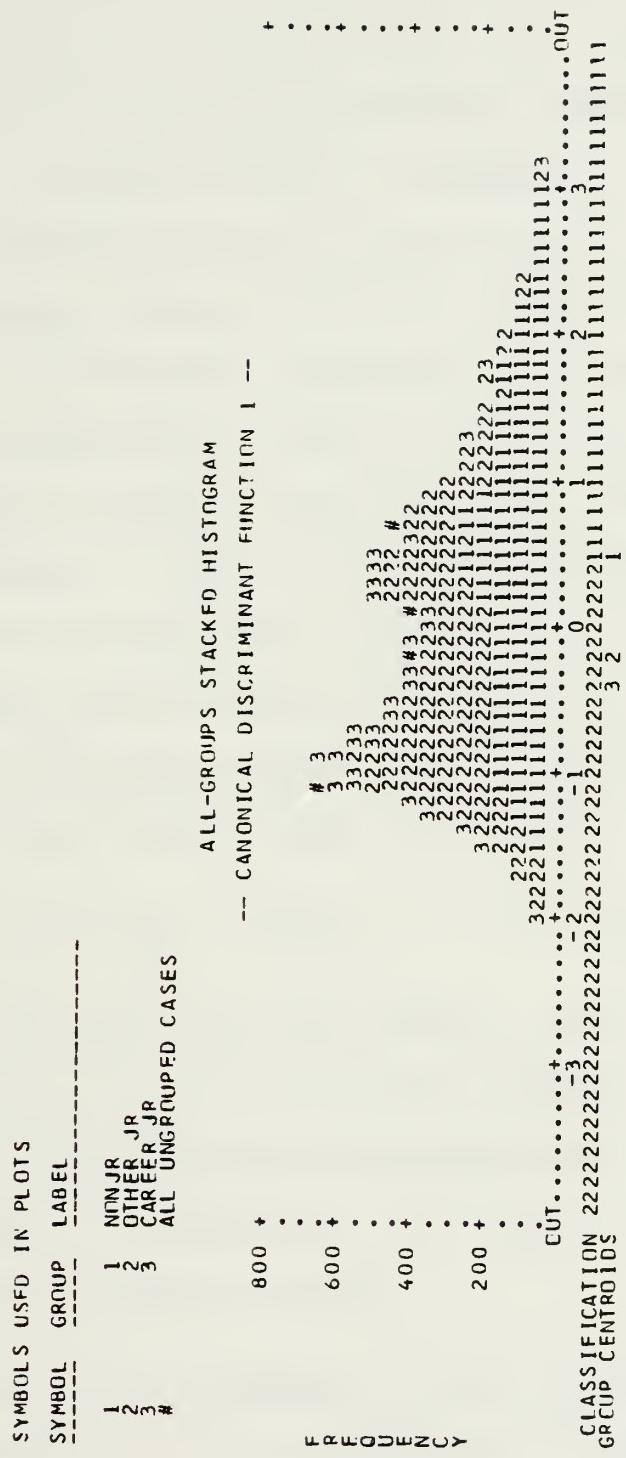
individual's coordinate on the discriminant-function axis. The \* in Table 4.20 indicates that only one discriminant function was necessary to account for at least 95 percent of the variance of the two discriminant function axes allowed. The eigenvalue of 0.11180 is a measure of the relative importance of this (the first) discriminant function as compared to the second function eigenvalue of 0.00475. Based on a canonical correlation of 0.317, the first discriminant function and junior status appear to be moderately correlated. The Wilks' lambda of 0.895 indicates that considerable unidimensional discriminating power exists in the ten independent variables being used. After reflecting the substantial discriminating power of the first discriminant function, lambda increases to 0.995 to reflect considerably lower discriminating power for the second; however, the chi-square of 53.558 is still statistically significant at the .001 level. This result indicates that the second function can add a statistically significant amount to the discriminating information of the first function.

The plot of the junior group centroids is shown in Figure 4. When there is only one discriminant function, as here, the plot takes the form of a stacked histogram. As depicted, the nonjunior group (1) is considerably more dispersed than the other junior group (2) or career juniors (3). Note there is considerable group overlap; the greater the discriminating power, the more clustered would be the groups, with greater distance between the group centroids.



FIGURE 4

## Enlisted Junior Status Group Centroid Plot



CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP MEANS (GROUP CENTROIDS)

GROUP	FUNC	1
1	0.40380	
2	-0.22817	
3	-0.43090	



Note that group (3) overlaps so much that, based on their discriminant-function values, all individuals are classifiable as members of only groups (1) and (2). The relative contribution that each of the eight discriminating variables makes to the first discriminant function is shown in Table 4.21. Father's education (DADSEduc), race and years of service (YRSOFSVC) account for most of the variation among the junior groups. Sex and the Marine Corps account for the smallest amount of variation among the junior groups.

The classification function coefficients for the eight independent variables included in the discriminant analysis are shown in Table 4.22. These classification function coefficients permit the classification of enlisted personnel, whose junior status is unknown, into the correct junior group with minimal error. The linear combinations for all discriminating variables are of the form:

$$D_i = d_{i1}Z_1 + d_{i2}Z_2 + \dots + d_{ip}Z_p$$

where  $D_i$  is the score for junior group  $i$ , the  $d$ 's are weighting coefficients, and the  $Z$ 's are the standarized individual values of the  $p$  discriminating variables used in the analysis. Take for example the nonjuniors; the linear combination of discriminating variables would be:

$$\text{NONJR} = -45.98 + 0.22 \times \text{DADSEduc} + 6.06 \times \text{RESPEDUC} + 0.88 \times \text{EXPPAYGR} + \dots + (-0.13D-01) \times \text{YRSOFSVC}.$$



TABLE 4.21

Standardized Canonical Discriminant Function  
Coefficients for Enlisted Sample

	FUNC 1
DADSEDUC	-0.495
RESPEDUC	-0.077
EXPPAYGR	-0.067
ARMY	0.117
MC	0.066
RACE	0.614
SEX	-0.049
YRSOFSVC	0.599



TABLE 4.22  
Enlisted Classification Function Coefficients

JUNIOR STATUS =	NONJR	OTHER JR	CAREER JR
DADSEDUC	0.216	0.270	0.316
RESPEDUC	6.057	6.087	6.109
EXPPAYGR	0.876	0.886	0.922
ARMY	1.12	0.895	1.005
MC	3.052	3.015	2.785
RACE	2.448	1.410	1.313
SEX	7.406	7.569	7.357
YRSOFSVC	-0.127D-01	-0.187D-01	-0.201D-01
(CONSTANT)	-45.976	-45.978	-48.070



Similar linear combinations can be written for other juniors and career juniors. An individual is classified in the junior-status group (i) for which his value of  $D_i$  is highest.

The discriminant analysis selected and used a number of variables to statistically distinguish among nonjuniors, other juniors and career juniors. The process of identifying the likely junior group membership of an enlisted person when the only information known is the respondent's values on selected discriminating variables makes use of the classification functions just described. Classification results are reported in Table 4.23. Overall, 57.4% of the 14,536 enlisted personnel were correctly classified in their proper junior status group. If one were to merely guess an enlisted person's junior status, the probability of being right would be calculated as follows:

$$\left(\frac{6110}{14,536}\right)^2 + \left(\frac{6663}{14,536}\right)^2 + \left(\frac{1531}{14,536}\right)^2 = .3979 \text{ or } 39.8\%$$

Using discriminant analysis, one could thus improve his chances of correctly classifying enlisted personnel into the proper junior status group by 17.6%.

## 2. Officer Discriminant Analysis Results

The DoD officer sample was subjected to the same discriminant analysis program as was just reported for the DoD enlisted sample. Of the 9,074 officers in the sample, 3,918 are nonjuniors, 3,799 are other juniors and 1,357 are career juniors. The group means for each independent or discriminating



TABLE 4.23  
Enlisted Classification Results

ACTUAL GROUP		NO. OF CASES	PREDICTED GROUP MEMBERSHIP		
			1	2	3
GROUP NONJR	1	6110	3366 55.1%	2744 44.9%	0 0.0%
GROUP OTHER JR	2	6663	1818 27.3%	4845 72.7%	0 0.0%
GROUP CAREER JR	3	1531	312 20.4%	1219 79.6%	0 0.0%
UNGROUPED CASES		232	130 56.0%	102 44.0%	0 0.0%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 57.40%

#### CLASSIFICATION PROCESSING SUMMARY

16774 Cases were processed.  
 2238 Cases had at least one missing discriminating variable.  
 14536 Cases were used for printed output.



variable are shown in Table 4.24. Approximately 4% of the officer sample are Black. Males comprise 84% of the sample and officer respondents averaged about 11.58 years on active duty when the survey was administered in 1979. The officer procurement program variable was modified to consider only service academy graduates and ROTC scholarship recipients. Eleven percent of the officers surveyed received commissions from the service academies; however, other and career juniors have proportionately more academy graduates than nonjuniors. Eight percent of all officers received their commissions from the ROTC scholarship program, and again the career and other juniors have significantly greater proportions than nonjuniors. The distribution of the officers by branch of service is shown in the bottom row of the table.

The discriminating variables were selected for entry into the analysis based on their discriminating power. The WILKS Stepwise method was used. The criterion was the overall multivariate F ratio for the test of differences among the junior group centroids. The variable that minimized Wilk's lambda, a measure of group discrimination, also maximized the F ratio. The stepwise variable-selection criteria and selection rules are shown in Table 4.25. The maximum F ratio to enter a discriminant variable and the minimum F ratio to remove a variable were set equal to .05. The minimum cumulative percent of variance was established at 95%; a maximum of two discriminant functions was specified. Prior probabilities were set equal to the proportion of respondents in



TABLE 4.24

Officer Sample and Group Means

NUMBER OF CASES BY GROUP <sup>1</sup>		NUMBER OF CASES		LABEL
JUNIOR STATUS	UNWEIGHTED	WEIGHTED		
Nonjr	3918	3918.0		Nonjr
Other Jr	3799	3799.0		Other Jr
Career Jr	1357	1357.0		Career Jr
TOTAL	9074	9074.0		
GROUP MEANS				
JUNIOR STATUS	DADSEDOC	ENTRYAGE	RESPEDUC	LGTHISVC
Nonjr	10.40	21.54	16.91	24.65
Other Jr	11.91	21.31	16.70	24.19
Career Jr	13.61	20.86	16.69	24.38
TOTAL	11.51	21.34	16.79	24.42
JUNIOR STATUS	RACE	SEX	URSOFSVC	SVCACAD
Nonjr	0.05	0.87	175.71	0.08
Other Jr	0.03	0.82	112.58	0.12
Career Jr	0.02	0.83	106.85	0.20
TOTAL	0.04	0.84	138.98	0.11
JUNIOR STATUS	AF	ARMY	NAVY	MC
Nonjr	0.30	0.21	0.26	0.23
Other Jr	0.24	0.20	0.32	0.23
Career Jr	0.21	0.24	0.29	0.26
TOTAL	0.26	0.21	0.29	0.24

<sup>1</sup>9565 (UNWEIGHTED) cases were processed.

491 of these were excluded from the analysis.

44 had missing or out-of-range group codes.

437 had at least one missing discriminating variable.

10 had both.

9074 (UNWEIGHTED) cases will be used in the analysis.



TABLE 4.25

Wilks Stepwise Selection Criterion for Officers

ANALYSIS NUMBER 1

## STEPWISE VARIABLE SELECTION

SELECTION RULE: MINIMIZE WILKS' LAMBDA  
 MAXIMUM NUMBER OF STEPS ..... 28  
 MINIMUM TOLERANCE LEVEL ..... 0.00100  
 MAXIMUM SIGNIFICANCE OF F TO ENTER ..... 0.05000  
 MINIMUM SIGNIFICANCE OF F TO REMOVE ..... 0.05000

## CANONICAL DISCRIMINANT FUNCTIONS

MAXIMUM NUMBER OF FUNCTIONS ..... 2  
 MINIMUM CUMULATIVE PERCENT OF VARIANCE .... 95.00  
 MAXIMUM SIGNIFICANCE OF WILKS' LAMBDA ..... 1.0000

## PRIOR PROBABILITIES

GROUP	PRIOR	LABEL
1	0.43178	NONJR
2	0.41867	OTHER JR
3	0.14955	CAREER JR
TOTAL	1.00000	

VARIABLES NOT IN THE ANALYSIS AFTER STEP 0

VARIABLE	MINIMUM TOLERANCE	SIGNIF. OF TOLERANCE	F TO ENTER	WILKS' LAMBDA
DADSEDUC	1.00	1.00	0.0000	0.954
ENTRYAGE	1.00	1.00	0.0000	0.996
RESPEDUC	1.00	1.00	0.0000	0.997
EXPPAYGR	1.00	1.00	0.0000	0.996
LGTHSVC	1.00	1.00	0.0000	0.963
ARMY	1.00	1.00	0.0035	0.999
NAVY	1.00	1.00	0.0000	0.996
MC	1.00	1.00	0.1889	0.999
AF	1.00	1.00	0.0000	0.994
RACE	1.00	1.00	0.0000	0.997
SEX	1.00	1.00	0.0000	0.996
YRSOFSVC	1.00	1.00	0.0000	0.876
SVCACAD	1.00	1.00	0.0000	0.984
ROTCSCH	1.00	1.00	0.0000	0.987



each junior status group. Before a variable is tested for selection during the stepwise procedure, its tolerance level is checked. If a variable with very low tolerance is used, large rounding errors may occur while computing the discriminant coefficients. This would then lead to faulty estimates and inaccurate classifications. The default minimum tolerance was set at .001. None of the discriminant variables was included in the analysis after step zero. Ten steps were required during the analysis. The discriminant variables were statistically tested and selected for inclusion or exclusion at each step. A summary of the stepwise selection process is provided in Table 4.26.

The two discriminant functions are described in Table 4.27. Geometrically, these functions correspond to coordinate axes in a plot of individuals and junior group centroids. A discriminant function is a linear composite of an individual's values of the discriminating variables that equals the individual's coordinate on the discriminant-function axis. Note that the two discriminant functions accounted for 100 percent of the variance. The eigenvalue measures the relative importance of each of the discriminant functions. Junior status and the first discriminant function appear to be moderately correlated, as evidenced by the canonical correlation of 0.423. Considerable unidimensional discriminating power exists in the ten independent variables that were used, as indicated by the Wilk's lambda of 0.807. Note the discriminating power



TABLE 4.26  
Officer Summary Table

STEP	ACTION ENTERED REMOVED	VARS IN	WILKS' LAMBDA	SIG.
1	YRSOFSVC	1	0.876	0.0000
2	DADSEDUC	2	0.850	0.0000
3	ENTRYAGE	3	0.832	0.0
4	SVCACAD	4	0.823	0.0
5	RACE	5	0.817	0.0
6	AF	6	0.815	0.0
7	LGTHSVC	7	0.812	0.0
8	ROTC SCH	8	0.810	0.0
9	NAVY	9	0.808	0.0
10	SEX	10	0.807	0.0



TABLE 4.27

Officer Canonical Discriminant Functions

FUNCTION	EIGENVALUE	PERCENT OF VARIANCE	CUMULATIVE PERCENT	CANONICAL CORRELATION
1*	0.21800	92.77	92.77	0.423
2*	0.01699	7.23	100.00	0.129

AFTER FUNCTION	WILKS' LAMBDA	CHI-SQUARED	D.F.	SIGNIFICANCE
0	0.807	1940.7	20	0.0
1	0.983	152.75	9	0.0

\* Marks the 2 canonical discriminant function(s) to be used in the remaining analysis.



for the second discriminant function is reduced considerably, but the chi-square of 152.75 remains statistically significant at the .01 level. The second function has added a statistically significant amount to the discriminating information of the first function.

Further evidence about junior group differences can be derived from the group centroids and a plot of the 9,074 cases. The junior group centroids are shown in Figure 5 in the lower left corner. The \* indicates a junior group centroid. Plots of all junior group cases reveal an extreme degree of intermingling exists. The greater the degree of intermingling the less successful were the discriminating variables in discriminating among the three junior groups. The territorial map shown in Figure 6 illustrates the classification procedures utilized for officer respondents. Each point on the graph is classified according to the centroid to which it is closest. Junior group centroids are denoted by the \*s near the center of Figure 6. A respondent is identified as a nonjunior, other junior or career junior depending on the location of his or her score. For example, the right side of the territorial map is nonjunior territory, lower left is territory for other juniors and the territory for career juniors is located in the upper left-hand corner. The contribution that each of the ten discriminating variables makes to functions I and II is shown in Table 4.28. Father's education (DADSEDUC) and years of service (YRSOFSVC) account for most of the variation among junior groups for function 1



FIGURE 5

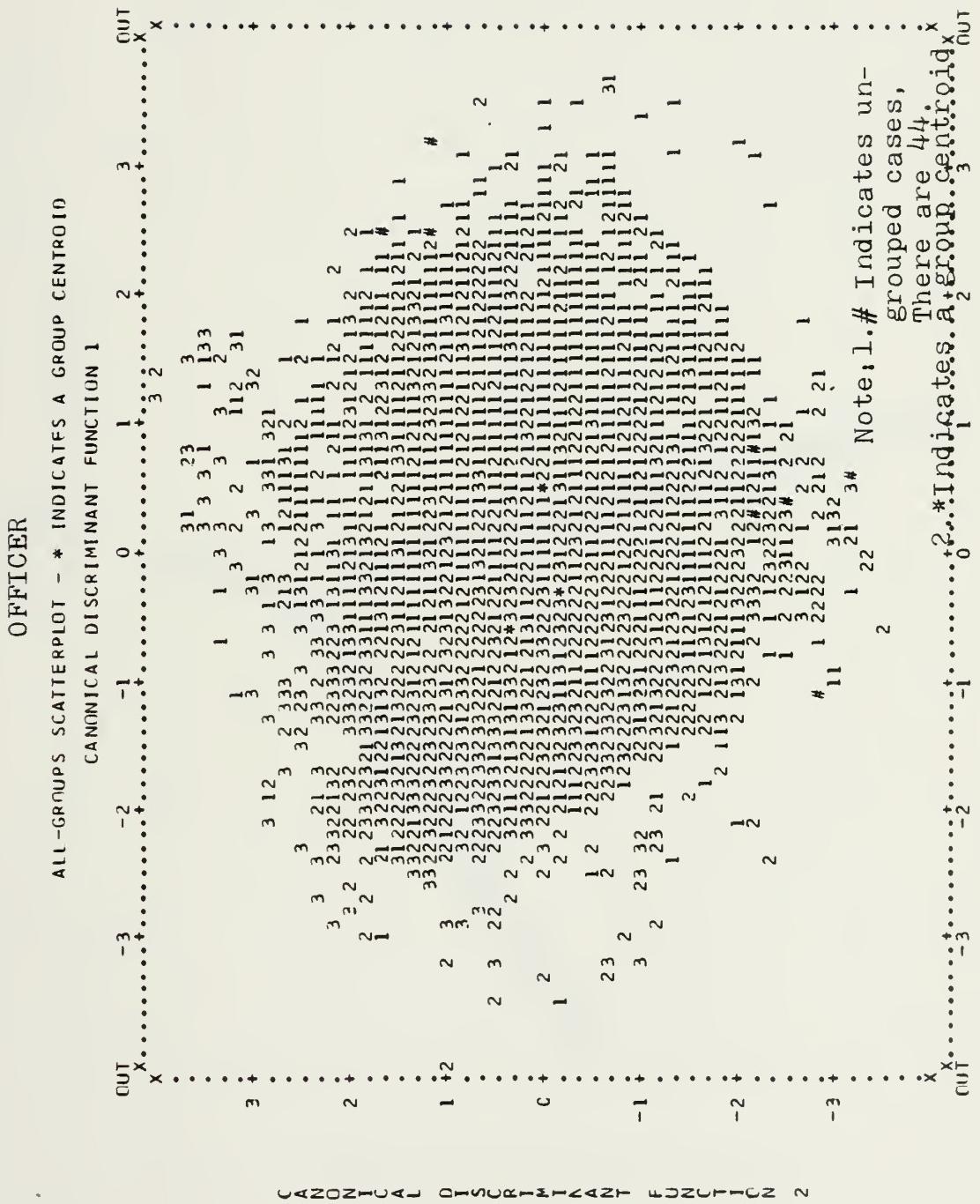




FIGURE 6

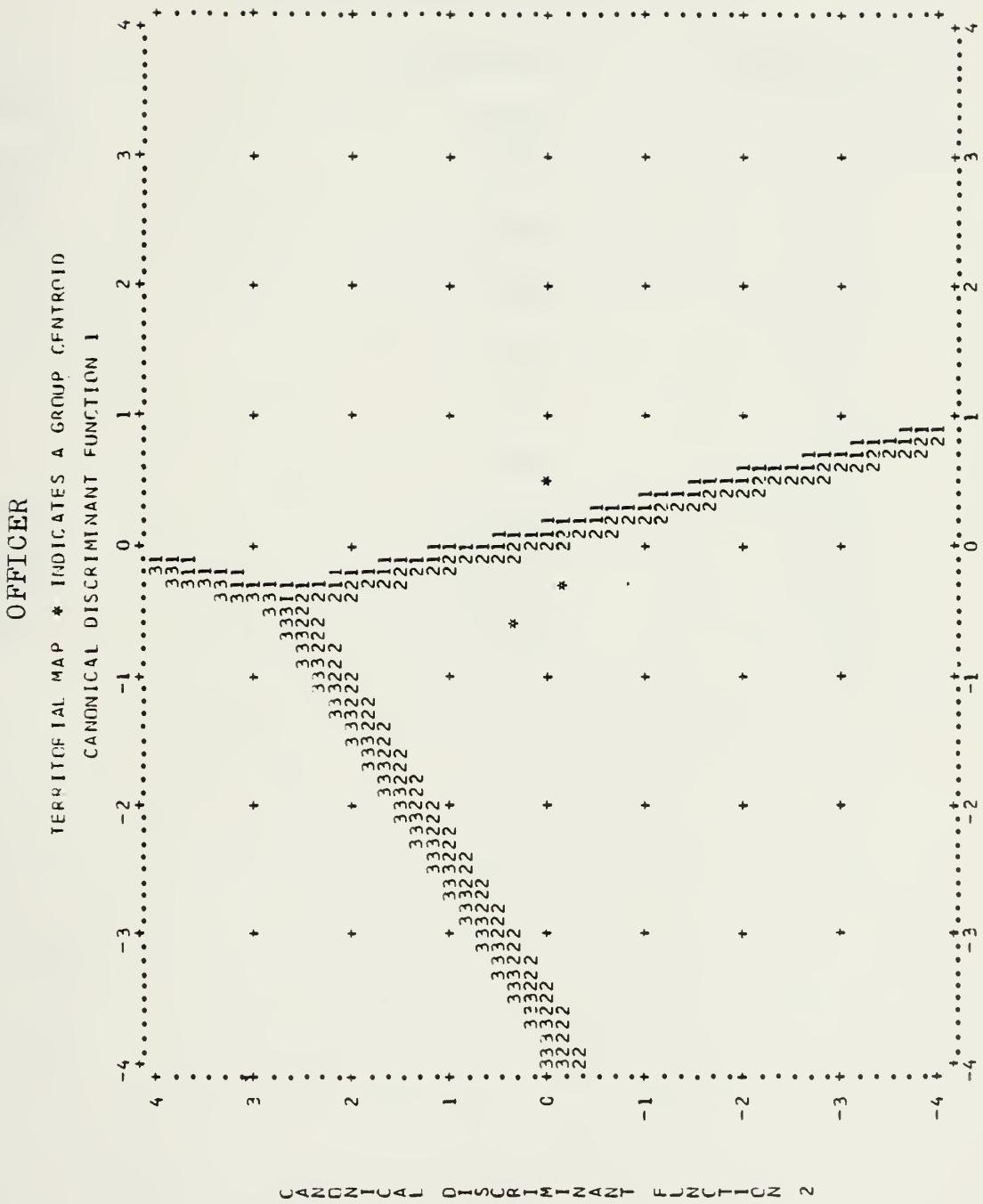




TABLE 4.28

Officer Standardized Canonical Discriminant  
Function Coefficients

	FUNCTION 1	FUNCTION 2
DADSEDUC	-0.308	0.551
ENTRYAGE	0.267	0.065
LGTHSVC	-0.159	0.350
NAVY	-0.002	-0.414
AF	0.162	-0.254
RACE	0.167	0.026
SEX	0.035	-0.224
YRSOFSVC	0.949	0.394
SVCACAD	-0.239	0.495
ROTC SCH	-0.109	0.290



while Navy and father's education account for most of the variation among junior groups for function 2. Sex, race and Navy account for the smallest amount of variation among junior groups for functions 1 and 2.

The classification function coefficients for the ten independent variables included in the discriminant analysis are shown in Table 4.29. These classification coefficients permit the classification of officer respondents, whose junior status is unknown, into the correct junior group with minimal error. The linear combinations for all discriminating variables are of the form:

$$D_i = d_{i1}Z_1 + d_{i2}Z_2 + \dots + d_{ip}Z_p$$

where  $D_i$  is the score for junior group  $i$ , the  $d$ 's are weighting coefficients, and the  $Z$ 's are the standardized individual values of the  $p$  discriminating variables used in the analysis. The linear combination of discriminating variable for officer career juniors would be:

$$\begin{aligned} \text{CAREER JR} = & -37.77 + .58 \times \text{DADSEduc} + 2.30 \times \text{ENTRYAGE} \\ & + 0.25 \times \text{LGTHSVC} + \dots + 2.20 \times \text{ROTC SCH}. \end{aligned}$$

Similar linear combinations can be written for officer non-juniors and officer other juniors. An individual is classified in the junior-status group ( $i$ ) for which his value of  $D_i$  is highest.

Discriminant analysis was used to statistically distinguish among nonjuniors, other juniors and career juniors.



TABLE 4.29  
Officer Classification Function Coefficients

JUNIOR STATUS =	NONJR	OTHER JR	CAREER JR
DADSEDUC	0.482	0.516	0.576
ENTRYAGE	2.380	2.314	2.298
LGTHSVC	0.219	0.228	0.249
NAVY	2.479	2.627	2.279
AF	1.672	1.455	1.118
RACE	5.925	5.188	4.971
SEX	8.262	8.279	8.014
YRSOFSVC	0.312D-01	0.211D-01	0.194D-01
SVCACAD	6.290	6.676	7.513
ROTC SCH	1.505	1.668	2.198
(CONSTANT)	-38.606	-36.339	-37.771



Using the classification functions just described, officers were identified as likely members of one of the three junior status groups. The classification results are reported in Table 4.30. Fifty-eight percent of the time an officer was correctly classified in his proper junior status group. The probability of correctly classifying an officer in the proper junior status group when merely guessing is calculated as follows:

$$\left(\frac{3918}{9118}\right)^2 + \left(\frac{3799}{9118}\right)^2 + \left(\frac{1357}{9118}\right)^2 = .3804 \text{ or } 38.0\%$$

Discriminant analysis thus improved the chance of correctly classifying officer respondents into the proper junior status group by 20.33%.

### 3. Summary of Discriminant Analysis

Discriminant analysis is a useful technique for statistically distinguishing among nonjuniors, other juniors and career juniors. Selection of the discriminating variables is critical; the discriminating power is dependent upon the variables included in the analysis. Father's education, years of service and race account for most of the variation among enlisted junior groups. Sex and the Marine Corps account for the smallest amount of variation among enlisted junior groups. For the officers father's education and years of service account for most of the variation among junior groups while sex, race and Navy account for the smallest amount of variation. Fifty-seven percent of the enlisted personnel were correctly



TABLE 4.30  
Officer Classification Results

ACTUAL GROUP		NO. OF CASES	PREDICTED GROUP MEMBERSHIP		
			1	2	3
GROUP NONJR	1	3918	2670 68.1%	1234 31.5%	14 0.4%
GROUP OTHER JR	2	3799	1175 30.9%	2568 67.6%	56 1.5%
GROUP CAREER JR	3	1357	301 22.2%	1001 73.8%	55 4.1%
UNGROUPED CASES		44	18 40.9%	26 59.1%	0 0.0%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 58.33%

#### CLASSIFICATION PROCESSING SUMMARY

9565 Cases were processed.

447 Cases had at least one missing discriminating variable.

9118 Cases were used for printed output.



classified in their proper junior status group. Use of discriminant analysis improves one's chance of correctly classifying enlisted personnel and officers into the proper junior status group by 17.6% and 20.33% respectively.



## V. CONCLUSIONS AND RECOMMENDATIONS

### A. INTERGENERATIONAL TENDENCIES WITHIN DEPARTMENT OF DEFENSE

The Department of Defense exhibits strong intergenerational occupational inheritance as evidenced by the prevalence of other juniors and career juniors on active duty in June, 1979. Fifty-seven percent of all DoD active duty personnel had parents who served in the military, of these 12% had parents who served for more than ten years. Distribution of junior groups vary across services. Approximately 16% of all officers are career juniors compared to only 12% enlisted career juniors. Black enlisted military come from predominately non-military experienced parents whereas the majority of Caucasian enlisted military have parents with military experience. Forty percent of the Black officers in DoD are other juniors compared to only 30% for Black enlisted but 9% of all Black enlisted are career juniors, while only 6% of all Black officers have parents with ten or more years military service.

Caucasian enlisted females have higher immobility ratios than Caucasian enlisted males. Parental military experience, as determined by the proportions of other juniors and career juniors, is much more prevalent amongst active duty military with less than ten years of service than it is for those military with ten or more years service. While the Department of Defense exhibits strong intergenerational occupational tendencies overall, three out of very four persons on active



duty with twenty or more years in the military have parents who did not serve.

Generally the DoD officer and enlisted immobility ratios are higher than almost all civilian occupation immobility ratios. Based on these immobility ratio comparisons, the military appears to exhibit greater intergenerational occupational inheritance tendencies than most salary or wage earning civilian occupations. Career juniors enter the military services in much greater proportions than expected based on their proportions in the national population.

#### B. BEHAVIORAL AND SOCIOECONOMIC DIFFERENCES

Junior status explains very little variation for the dependent variables examined after controlling for the effects of branch of service, sex, race and length of service. The one exception is father's education where junior status accounted for more variation than any of the other independent variables. Career junior's fathers are generally better educated than fathers of nonjuniors, possibly due to the educational benefits available to military veterans under the G.I. Bill of Rights.

Mean levels of satisfaction with the military and assessment of morale differ very little among junior groups. Junior status accounts for hardly any of the variability in intended years of service or anticipated pay grade expectations. Enlisted junior groups do not differ significantly in their intent to reenlist in the military without a bonus. Propensity



to reenlist is directly related to time in service, those enlisted personnel with more time in service are more likely to reenlist than those with fewer years in the military. Proportionately more officer career juniors received commissions from the service academies and the ROTC scholarship programs than officer nonjuniors and officer other juniors. Awareness of the scholarship options available, an earlier interest in the military, and preferential admittance of sons and daughters of academy graduates to the service academies are possible explanations for the proportional differences among junior groups receiving commissions from these two officer procurement programs.

Junior groups can be statistically distinguished from one another. On average, 57% of all enlisted respondents and 58% of the officer respondents were correctly classified in their proper junior status group. The probability of correctly classifying junior status is increased by 19% when using discriminant analysis.

#### C. POLICY IMPLICATIONS

Military offspring provide an important source of manpower to help meet the increasing demands of expanding and more technically sophisticated services. The effects of intergenerational succession in the military should be recognized and understood by personnel and manpower policy makers. The continuing decline in the number of eligible, qualified and interested young Americans who will make the military



their occupational choice coupled with the ever present competition with the private sector give rise for concern. The Department of Defense must expend some energy in attempting to identify and strengthen those features of military service which are associated with normative commitments to military service. It might also be useful for DoD to consider the process by which intergenerational linkages are produced in the military.

Manpower policy choices should not neglect the changing prevalence of juniors in the population and their relatively high rate of participation in the military. Personnel procurement policies need to make allowances for the contribution of the junior pool. Accurate assessment of the impact that future policy changes (i.e., proposed legislation to alter the military retirement system) might have on the military's attractiveness as an occupational choice and possible career is critical. The proportion of juniors in the population may be an important variable to include in the development of econometric supply equations for non-prior service accessions.

#### D. RECOMMENDATIONS FOR FURTHER RESEARCH

Active duty personnel in June, 1979 come from two different eras. Those who entered military service prior to June, 1973 represent the draft era while personnel coming on active duty after June, 1973 represent the All-Volunteer Force (AVF) era. These two groups could have different reasons for



being in the military; some may have been draft motivated while others truly volunteered to serve their country. It is suspected that intergenerational occupational inheritance tendencies within the military might differ between the two eras. Military intergenerational research should be conducted periodically to examine intergenerational trends as a function of the manpower procurement methods used to staff the military.



## APPENDIX A

### RECODE OF PARENTAL MILITARY EXPERIENCE VARIABLES

The stratification of officer and enlisted respondents into three junior status categories required the recoding of a series of questions pertaining to the military experience of family members.

#### A. ENLISTED RECODE PROGRAM

Parental military experience was addressed in Section IV of Form 2 [Ref. 19] for enlisted personnel. Respondents were asked to indicate the number of immediate family with military experience in question Q38. Immediate family includes: respondent's father or male guardian; respondent's mother or female guardian; respondent's children; and, respondent's brothers or sisters. If the respondent indicated one or more family members served in the military, the respondent was asked to complete questions Q39A to Q39X for up to four immediate family members. If there were more than four immediate family members with military experience, respondents were instructed to record information about four in this order: parents; children; brothers; and, sisters. Information pertaining to immediate family members military experience included: person's relationship to respondent; service of family member; and total number of military service.

The recode program shown in Figure A.1, is dependent on father and mother responses for first relative (Q39A), second



FIGURE A.1

Enlisted Junior Status Program

This is a PGM to recode all the variables dealing with parental military experience. File name is Q39ZREC. New variable will be named JR STATUS.

```

5 COMPUTE      MEMBER 1=3
6 IF           (Q39A EQ -1 OR Q39F EQ -1) MEMBER1=-1
7 IF           (Q39A EQ 1 AND Q39F EQ 1) MEMBER1=1
8 IF           (Q39A EQ 1 AND Q39F EQ 2) MEMBER1=1
9 IF           (Q39A EQ 2 AND Q39F EQ 1) MEMBER1=1
10 IF          (Q39A EQ 2 AND Q39F EQ 2) MEMBER1=1
11 IF          (Q39A EQ 1 AND Q39F EQ 3) MEMBER1=2
12 IF          (Q39A EQ 1 AND Q39F EQ 4) MEMBER1=2
13 IF          (Q39A EQ 2 AND Q39F EQ 3) MEMBER1=2
14 IF          (Q39A EQ 2 AND Q39F EQ 4) MEMBER1=2
15 COMPUTE     MEMBER2=3
16 IF           (Q39G EQ -1 OR Q39L EQ -1) MEMBER2=-1
17 IF           (Q39G EQ 1 AND Q39L EQ 1) MEMBER2=1
18 IF           (Q39G EQ 1 AND Q39L EQ 2) MEMBER2=1
19 IF           (Q39G EQ 2 AND Q39L EQ 1) MEMBER2=1
20 IF           (Q39G EQ 2 AND Q39L EQ 2) MEMBER2=1
21 IF           (Q39G EQ 1 AND Q39L EQ 3) MEMBER2=2
22 IF           (Q39G EQ 1 AND Q39L EQ 4) MEMBER2=2
23 IF           (Q39G EQ 2 AND Q39L EQ 3) MEMBER2=2
24 IF           (Q39G EQ 2 AND Q39L EQ 4) MEMBER2=2
25 COMPUTE     MEMBER3=3
26 IF           (Q39M EQ -1 OR Q39R EQ -1) MEMBER3=-1
27 IF           (Q39M EQ 1 AND Q39R EQ 1) MEMBER3=1
28 IF           (Q39M EQ 1 AND Q39R EQ 2) MEMBER3=1
29 IF           (Q39M EQ 2 AND Q39R EQ 1) MEMBER3=1
30 IF           (Q39M EQ 2 AND Q39R EQ 2) MEMBER3=1
31 IF           (Q39M EQ 11 AND Q39R EQ 3) MEMBER3=2
32 IF           (Q39M EQ 1 AND Q39R EQ 4) MEMBER3=2
33 IF           (Q39M EQ 2 AND Q39R EQ 3) MEMBER3=2
34 IF           (Q39M EQ 2 AND Q39R EQ 4) MEMBER3=2
35 COMPUTE     MEMBER4=3
36 IF           (Q39S EQ -1 OR Q39X EQ -1) MEMBER4=-1
37 IF           (Q39S EQ 1 AND Q39X EQ 1) MEMBER4=1
38 IF           (Q39S EQ 1 AND Q39X EQ 2) MEMBER4=1
39 IF           (Q39S EQ 2 AND Q39X EQ 1) MEMBER4=1
40 IF           (Q39S EQ 2 AND Q39X EQ 2) MEMBER4=1
41 IF           (Q39S EQ 1 AND Q39X EQ 3) MEMBER4=2
42 IF           (Q39S EQ 1 AND Q39X EQ 4) MEMBER4=2
43 IF           (Q39S EQ 2 AND Q39X EQ 3) MEMBER4=2
44 IF           (Q39S EQ 2 AND Q39X EQ 4) MEMBER4=2

```



FIGURE A.1 CONTINUED

Enlisted Junior Status Program

```
45 COMPUTE STATUS=1
46 IF (MEMBER1 EQ -1 AND MEMBER2 EQ -1 AND
47 MEMBER3 EQ -1 AND MEMBER4 EQ -1) STATUS=-1
48 IF (MEMBER1 EQ 1 OR MEMBER2 EQ 1 OR MEMBER3 EQ 1
49 OR MEMBER4 EQ 1) STATUS=2
50 IF (MEMBER1 EQ 2 OR MEMBER2 EQ 2 OR MEMBER3 EQ 2
51 OR MEMBER4 EQ 2) STATUS=3
52 VALUE LABELS STATUS (-1)MISSING (1)NONJR (2)OTHER JR
53 (3)CAREER JR
54 ASSIGN MISSING STATUS (-1)
55 SAVE FILE POPENL1
```



relative (Q39G), third relative (Q39M) and the fourth relative (Q39S). Respondents who indicated that either father or mother served in the military are classified as juniors and then are categorized as other juniors or career juniors based on the number of years of parental military experience. Other juniors are respondents whose parent(s) served less than ten years, career juniors are respondents whose parent(s) served more than ten years. If the respondent's parent(s) did not serve in the military they are classified as non-juniors. The variable named STATUS was assigned three values: (1) for nonjuniors; (2) for other juniors; and, (3) for career juniors.

#### B. OFFICER RECODE PROGRAM

The officer recode program shown in Figure A.2 is identical to the enlisted program except for the questions about parental military experience. Officer respondents were requested to complete questions Q40 and Q41A to Z41X on Form 4. Again the variable STATUS was created to categorize respondents as nonjuniors, other juniors or career juniors.

The enlisted and officer recode programs have been included for informational purposes. The DoD Survey Data was coded for SPSS (Statistical Package for the Social Sciences) manipulation, hence the aforementioned programs are in SPSS.



FIGURE A.2

Officer Junior Status Program

This is a PGM to recode all the parental military experience questions into a new variable called JR STATUS. This will be for the officer sample, file name is Q41ZCODE.

```

6 COMPUTE MEMBER1=3
7 IF      (Q41A EQ -1 OR Q41F EQ -1) MEMBER1=-1
8 IF      (Q41A EQ 1 AND Q41F EQ 1) MEMBER1=1
9 IF      (Q41A EQ 1 AND Q41F EQ 2) MEMBER1=1
10 IF     (Q41A EQ 2 AND Q41F EQ 1) MEMBER1=1
11 IF     (Q41A EQ 2 AND Q41F EQ 2) MEMBER1=1
12 IF     (Q41A EQ 1 AND Q41F EQ 3) MEMBER1=2
13 IF     (Q41A EQ 1 AND Q41F EQ 4) MEMBER1=2
14 IF     (Q41A EQ 2 AND Q41F EQ 3) MEMBER1=2
15 IF     (Q41A EQ 2 AND Q41F EQ 4) MEMBER1=2
16 COMPUTE MEMBER2=3
17 IF      (Q41G EQ -1 OR Q41L EQ -1) MEMBER2=-1
18 IF      (Q41G EQ 1 AND Q41L EQ 1) MEMBER2=1
19 IF      (Q41G EQ 1 AND Q41L EQ 2) MEMBER2=1
20 IF     (Q41G EQ 2 AND Q41L EQ 1) MEMBER2=1
21 IF     (Q41G EQ 2 AND Q41L EQ 2) MEMBER2=1
22 IF     (Q41G EQ 1 AND Q41L EQ 3) MEMBER2=2
23 IF     (Q41G EQ 1 AND Q41L EQ 4) MEMBER2=2
24 IF     (Q41G EQ 2 AND Q41L EQ 3) MEMBER2=2
25 IF     (Q41G EQ 2 AND Q41L EQ 4) MEMBER2=2
26 COMPUTE MEMBER3=3
27 IF      (Q41M EQ -1 OR Q41R EQ -1) MEMBER3=-1
28 IF      (Q41M EQ 1 AND Q41R EQ 1) MEMBER3=1
29 IF      (Q41M EQ 1 AND Q41R EQ 2) MEMBER3=1
30 IF     (Q41M EQ 2 AND Q41R EQ 1) MEMBER3=1
31 IF     (Q41M EQ 2 AND Q41R EQ 2) MEMBER3=1
32 IF     (Q41M EQ 1 AND Q41R EQ 3) MEMBER3=2
33 IF     (Q41M EQ 1 AND Q41R EQ 4) MEMBER3=2
34 IF     (Q41M EQ 2 AND Q41R EQ 3) MEMBER3=2
35 IF     (Q41M EQ 2 AND Q41R EQ 4) MEMBER3=2
36 COMPUTE MEMBER4=3
37 IF      (Q41S EQ -1 OR Q41X EQ -1) MEMBER4=-1
38 IF      (Q41S EQ 1 AND Q41X EQ 1) MEMBER4=1
39 IF      (Q41S EQ 1 AND Q41X EQ 2) MEMBER4=1
40 IF     (Q41S EQ 2 AND Q41X EQ 1) MEMBER4=1
41 IF     (Q41S EQ 2 AND Q41X EQ 2) MEMBER4=1
42 IF     (Q41S EQ 1 AND Q41X EQ 3) MEMBER4=2
43 IF     (Q41S EQ 1 AND Q41X EQ 4) MEMBER4=2
44 IF     (Q41S EQ 2 AND Q41X EQ 3) MEMBER4=2
45 IF     (Q41S EQ 2 AND Q41X EQ 4) MEMBER4=2

```



FIGURE A.2 CONTINUED

Officer Junior Status Program

```
46 COMPUTE STATUS=1
47 IF (MEMBER1 EQ -1 AND MEMBER2 EQ -1 AND MEMBER3
48 EQ -1 AND MEMBER4 EQ -1) STATUS=-1
49 IF (MEMBER1 EQ 1 OR MEMBER2 EQ 1 OR MEMBER3 EQ 1
50 OR MEMBER4 EQ 1) STATUS=2
51 IF (MEMBER1 EQ 2 OR MEMBER2 EQ 2 OR MEMBER3 EQ 2
52 OR MEMBER4 EQ 2) STATUS=3
53 VALUE LABELS STATUS (-1)MISSING (1)NONJR (2)OTHER JR
54 (3)CAREER JR
55 ASSIGN MISSING STATUS(-1)
56 SAVE FILE OFFICER1
```



LIST OF REFERENCES

- K
1. Robinson, R. S., "Intergenerational Occupational Inheritance in the Navy," Masters Thesis, Naval Postgraduate School, June 1981.
  2. Dunkerly, D., Occupations and Society, Routledge & Kegan Paul, 1975.
  3. Shartle, C. L., Occupational Information: Its Development and Application, Prentice-Hall, Inc., 1959.
  4. Taylor, M. L., Occupational Sociology, Oxford University Press, 1968.
  5. Caplow, T., The Sociology of Work, McGraw-Hill Book Co., 1964.
  6. Blau, P. M. and Duncan, O. D., The American Occupational Structure, John Wiley Sons, 1967.
  7. Hauser, R. M., Koffel, J. N., Travis, H. P., and Dickinson, P. J., "Temporal Change in Occupational Mobility: Evidence for Men in the United States," American Sociological Review, V. 40, p. 279-297, June 1975.
  8. Hauser, R. M., Dickinson, P. J., Travis, H. P., and Koffel, J. N., "Structural Changes in Occupational Mobility Among Men in the United States," American Sociological Review, V. 40, p. 585-598, June 1975.
  9. Featherman, D. L. and Hauser, R. M., Opportunity and Change, Academic Press, 1978.
  10. Janowitz, M., The Professional Soldier: A Social and Political Portrait, The Free Press, 1960.
  11. Warner, W. L., Van Riper, P. P., Martin, N. H., and Collins, O. F., The American Federal Executive, Yale University Press, 1963.
  12. Card, J. J., Goodstadt, B. E., Gross, D. E., and Shanner, W. M., Development of a ROTC/Army Career Commitment Model, American Institute of Research, 1975.
  13. Moskos, C. C., Jr., The American Enlisted Man: The Rank and File in Today's Military, Russell Sage Foundation, 1970.



14. Sharp, L. M. and Biderman, A. D., The Employment of Retired Military Personnel, BSSR371, Bureau of Social Science Research, Inc., 1966.
15. Lovell, John P., "The Professional Socialization of the West Point Cadet," The New Military: Changing Patterns of Organization, M. Janowitz, (Ed.), Russell Sage Foundation, 1964.
16. Zald, M. N. and Simon, W., "Career Opportunities and Commitments Among Officers," The New Military: Changing Patterns of Organization, M. Janowitz, (Ed.), Russell Sage Foundation, 1964.
17. Lang, K., Military Institutions and the Sociology of War: A Review of the Literature with Annotated Bibliography, Sage Publications, 1972.
18. Faris, J. H., "The All-Volunteer Force: Recruitment from Military Families," Armed Forces and Society, V. 7, p. 545-558, Summer, 1981.
19. Doering, Z. D., Grissmer, D. W., Hawes, J. A., and Hutzler W. P., 1978 DoD Survey of Officers and Enlisted Personnel: User's Manual and Codebook, The Rand Corporation, Santa Monica, California, 1981.
20. Biderman, A. D., and Haley, B. A., An Exploratory Study of Intergenerational Occupational Succession in the Navy, BSSR0003-71, Bureau of Social Science Research, Inc., 1979.



## INITIAL DISTRIBUTION LIST

	No. Copies
1. Defense Technical Information Center Cameron Station Alexandria, Virginia 22314	2
2. Library, Code 0142 Naval Postgraduate School Monterey, California 93940	2
3. Department Chairman Department of Administrative Sciences, Code 54 Naval Postgraduate School Monterey, California 93940	1
4. Commander, MILPERCEN ATTN: DAPC-PS (BG PEDE) 200 Stovall Street Alexandria, Virginia 22332	2
5. Professor George Thomas Department of Administrative Sciences, Code 54 Te Naval Postgraduate School Monterey, California 93940	2
6. Professor Ronald Weitzman Department of Administrative Sciences, Code 54 Wz Naval Postgraduate School Monterey, California 93940	2
7. LCDR K. S. Robinson, USN OP 12C Washington, D. C. 20350	1
8. Captain Joseph M. Hunt, Jr., USA 2810 Evans Drive Dothan, Alabama 36301	2







17079

Thesis

H946

c.1

Hunt

Intergenerational  
occupational inherit-  
ance in the Department  
of Defense.

Thesis

H946

c.1

Hunt

Intergenerational  
occupational inherit-  
ance in the Department  
of Defense.

thesH946  
Intergenerational occupational inheritan



3 2768 002 13270 6  
DUDLEY KNOX LIBRARY